Wellhead Protection Plan

Mill Brook Watershed
Rockport, Massachusetts

Project Number 02-06 WHP

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I. Purpose and Process of Development of the Plan

IA. Purpose

The Town of Rockport relies on the water resources of the Mill Brook watershed for a significant portion of its total drinking water supply. The wells in the Mill Brook wellfield are permitted for approximately 25% of the total permitted capacity in Town, but on an annual bases provides around 20% of water consumed. The Town has been making consistent efforts over the last twenty or more years to improve the water quality available in Town and to improve protection of its drinking water sources.

The Mill Brook well field, consisting of three shallow tubular wells, is the only groundwater source of Rockport's drinking water supply. All other sources are from surface waters. The Mill Brook well field is closely linked to a back-up surface water supply, Loop Pond, that is fed by Mill Brook and located immediately upstream from the location of the wells. Loop Pond is protected as a back-up water source for the Town of Rockport but has not been drawn on in many years.

In Rockport's efforts to protect its drinking water supply, Town Meeting in 1989 established a Watershed Protection Overlay District which is designated on the Town's Zoning Map indicating the watershed area to be protected through restricted use. This bylaw is no longer current with the state's protection guidelines, and was written to primarily address protection of surface water supplies.

Another major effort to protect the Mill Brook watershed occurred in 1999 when the Town contracted with Talkington Edson Environmental Management to delineate the conceptual Zone II of the Mill Brook wellfield. Referred to as the TEEM report, this work estimated the boundaries and extent of the Zone II of the wells capture zone. This report recommended that local bylaws should be improved to conform with the Massachusetts Department of Environmental Protection's Guidelines and Policies for Public Water Systems.

This Mill Brook watershed planning effort was undertaken because of:

1. The wellfield's hydrogeologic sensitivity: shallow depth, the absence of hydrogeologic barriers that can prevent migration of contaminants;
2. The potential threats to the wells within the Zone I and II: the MBTA commuter rail line, two storm drains (one of which was constructed after project start-up), septic systems, steep slopes below the septic systems and storm drains, and construction of a new subdivision;
3. The identified need to update local bylaws to be consistent with state directives;
4. The need to educate town and watershed residents about protecting the Mill Brook wells and the watershed.

IB. Process of Plan Development

In October of 2000, a Watershed Protection Committee (WPC) was established by the Commissioners of the Department of Public Works. The proposal that sought funding for this wellhead protection plan was authored by the WPC and staff of the Department of Public Works. The six individuals were appointed to this Committee are key Town staff or knowledgeable citizens. The Committee members are:

Eric Hutchins - Chair
Julie McMahon
John Tomasz P.E.- Director of Rockport Department of Public Works
Matt Collins - Vice-Chair
John Catena
Ronald O'Brien

The grant for this project was awarded in 2002. With the award of the grant, the Committee hired Community Investment Associates, the BioEngineering Group, and Cape Ann Mapping to prepare the Mill Brook Watershed Protection Plan.

The Watershed Protection Committee sampled stormwater discharge in the watershed. They sampled on two occasions at different times of year when there were adequate storm events. Committee members have participated in all phases of initiating inquiry and in review of the Plan. The Committee met monthly over the 18 month period the Plan was developed, and provided steady oversight and valuable input and direction to the consultants. The full participation of the Committee has been key to assuring that this Plan meets the needs of the watershed and the requirements of the grant.

II. Description of the Mill Brook Watershed

II.A. Location and Physical Characteristics of the Mill Brook Watershed

The Mill Brook watershed is located in the central west portion of the Town of Rockport, north of Route 127 and split by the commuter rail line. (Figure 1) The wellfield is located near the downstream end of the watershed.

The wells are located in shallow, unconsolidated glacial deposits between Pool's Hill to the north and Great Hill to the south. These deposits are typical of the Rockport region. (TEEM Project) Test drilling at the wellfield showed that there is 3-4 feet of fine sand and peat in the Mill Brook valley and likely over the length of the wellfield. This is underlain by sand and gravel for 6-7 feet, silt and clay deposits for a depth of 10-12 feet, followed by additional sand and gravel deposits. Bedrock is presumed to be at depths of 36' or more. (TEEM)

Mill Brook drains the watershed, with water moving from the northwest to the southeast, moving from the area of Briar Swamp through Loop Pond and over the wellfield. It has been determined

that the dominant outlet of Briar Swamp appears to be towards the Alewife Brook in Gloucester. Not considering Briar Swamp, the sub-basin surrounding Loop Pond and Mill Brook is estimated to include between .4 and .45 square miles. (TEEM) Groundwater flow near the wellfield is predominantly toward Mill Brook as it follows the stream drainage of the surface water. Water withdrawal from the wells causes additional flow towards the wellfield. It is believed that little recharge of the wells comes from underlying bedrock deposits. (TEEM)

The Mill Brook tubular wells were initially installed in 1925 and first used for the Town's water supply in 1938. They are located in permeable deposits, drilled to depths. of approximately 21-23 feet. Figure 2 shows the location of the three wells and their associated Zone I's (a circle delineated around each well with a radius of 400'). The wells are located adjacent to and under the bordering vegetated wetlands of the Mill Brook and roughly in a row running east from the location of the pump house.

II.B. Public Water Supply Infrastructure

Infrastructure located within the Mill Brook watershed that are necessary to utilize this water supply include the three wells, a submerged pump located within each of the three wells, the pump house, and the raw water line carrying the water principally to Cape Pond. At Cape Pond, the water from the Mill Brook wells is mixed with water from other sources, withdrawn, and then treated. If there are water quality problems in Cape Pond, or other management purposes requiring it, water withdrawn from the Mill Brook wells can be pumped directly to the Rockport Water Treatment Plant.

Water from the Mill Brook wells is utilized for periods of several months at a time, typically in early spring and summer. They are taken off-line for several months at a time. These wells are generally not used when the reservoirs are full. Occassionally, the Mill Brook wellfield has been pumped dry. Procedures for initiating pumping from the wells includes testing the water quality before start-up.

IIC. Land Uses within the Mill Brook Watershed Area

The majority of the Mill Brook watershed is undeveloped. According to records from the Rockport Assessors' office, there are a total of 159 parcels in separate ownership, and a total of 224 parcels within the defined watershed boundaries – these are indicated on Figure 3. Assessors' records provide important information on the specific land use within the watershed area.

The predominant land use in the watershed is forest cover, primarily on vacant parcels, but also in part on some of the residential parcels. There are also extensive wetlands, primarily associated with Briar Swamp and with Loop Pond. Smaller wetlands, like those adjacent to Mill Brook, are also present.

Residential land use, located on 113 parcels totaling 53.6 acres, is not extensive covering only 11.9% of the watershed. It is located primarily on the southern border of the watershed, adjacent

to Route 127 up to the west side of Poole's Lane. There are only 6 parcels with commercial or industrial development, comprising 3.3 acres or .7% of the watershed area.

A full 55.7% of the watershed is in protected open space in public or non-profit ownership. Having so much undeveloped land in the watershed is beneficial to the protection of the water supply and is unlikely to change significantly in the future. The Lattof Lane Extension Subdivision is now under construction and will add 13 new residences to the watershed. The subdivision will be sewered, but stormwater from the subdivision will be discharged toward Loop Pond and the wellfield if stormwater levels reach the overflow discharge in the detention basin.

Of the 92 developed residential properties within the watershed at the time the Assessors' data was collected (summer 2003), 68 are single family homes, while the rest are small multi-family properties. Of these residential properties, 35 use on-site septic systems while the rest are connected to the Town's sewer. Two of the septic systems are known to be Title 5 compliant. Three of the residential properties report on-site wells.

Approximately one-quarter of the parcels in the watershed are publicly-owned, almost exclusively by the Town of Rockport (41 parcels). This ownership is favorable to water quality protection as Rockport has control over the uses on these sites and can determine best uses taking into consideration potential impacts on water quality.

The business uses within the watershed include a restaurant, a gas station, and several small commercial and industrial businesses. While these are few in number, their location and activities can present some threat to the wellfield. The Massachusetts Bay Transit Authority (MBTA), operator of the commuter rail service to Boston and maintenance entity for the commuter rail tracks, includes 19.0 acres, 9 parcels, and 4.2% of watershed land. Their location and use is clear from Figure 3.

A full10.5% of the watershed area are in parcels in private ownership that are currently in a "tax title" status with the Town of Rockport. This presents a significant opportunity to increase the protected status of watershed area in municipal ownership should the conversion from "tax title" to public ownership be completed.

Overall, the current pattern of ownership and use in the Mill Brook watershed offers significant protection to the wells. Some of the vacant parcels are small and located in the area of very small lots on streets that are unlikely to be built in the southeast corner of the watershed. Three of these parcels that were privately owned were donated to the Town of Rockport in the spring of 2004. Certainly gaining ownership and control over any vacant parcels within the watershed that could be developed is an important goal for watershed protection.

IID. Water Quality and Potential Threats

The quality of water that is produced by the Mill Brook wells has been historically very good. The raw water contains naturally-occurring levels of iron and manganese that require treatment. There has never been an incidence of contamination detected in water from the Mill Brook wells (John Tomasz).

Testing of the quality of water pumped from the Mill Brook wells is undertaken before the wells are brought back on-line. This testing is for a broad spectrum of contents and possible contaminants. Water at the Mill Brook wells is tested daily for pH during pumping. Mill Brook wells, like all raw water supplies in Rockport, are tested quarterly for broad spectrum contents and possible contaminants. Finished water is tested daily at the filtration plant. Between quarterly testing, contamination problems could escape detection until they were detected in the finished water.

The TEEM Report prepared in 1999 briefly addressed the question of potential sources of contamination within the Mill Brook watershed. It reported on the results of a database review they conducted for the Zone II and surrounding areas using DataMap Technology Corporation's on-line database reporting PCS's (potential contamination sources). Only the industrial site now owned and operated as Sandy Bay Machine but formerly operated as TADCO, Inc., was identified as having ground water on site that was contaminated with solvents. This site has been remediated. The TEEM Report also identified accidental spills or releases from catastrophic occurrences along the railroad and in residential areas as important threats.

There are several land uses in the Mill Brook watershed that threaten water quality in the short run and in the long run. These threats, identified on Figure 4, include:

1. Presence of the MBTA Commuter Rail line cutting through the Zone I of the Mill Brook well field and watershed, and adjacent to the wells. Oil-based products and solvents used for operating the trains can leak and creosote in the rail ties can seep into the ground. There is indication of this activity occurring on the tracks and ground abutting the tracks;
2. Presence of a storm drain located above a steep slope on the south side of the watershed that drains a high-density residential neighborhood with several failing septic systems;
3. Operation and maintenance of the pump house associated with the three wells in the Mill Brook wellfield;
4. Presence of at least one industrial use within the watershed and another that has a storm drain that discharges near the wells from outside the watershed;
5. Location of additional threats just outside the mapped Zone II, including a small industrial facility, a large residential development with a swimming pool, and an above-ground storage tank;.
6. Residential uses in or adjacent to the Zone I. Threats could include on-site disposal of waste oil or other toxic products, and excess use of fertilizer and pesticides. Test results associated with this Plan indicate contamination from several septic systems in the Hodgkin's Road are the likely the cause of contamination;

7. Construction of a subdivision of 13 homes just south of Loop Pond in the watershed. Construction of infrastructure is largely complete, but construction of the 13 homes is about to commence.

III. Stormwater Run-off in the Watershed

III.A. Location and Condition of Test Sites

The first set of water samples were collected on October 15, 2003 in heavy rain and wind at approximately 5:00 am from the Hodgkins Road outfall, the only known stormwater outfall in the wellfield's watershed at the time this planning activity was undertaken. They were delivered to the analytical laboratory the same morning and tested for a broad range of constituents including volatile organic compounds (VOCs), 13 "priority pollutant" metals, pesticides, herbicides, nitrate, total phosphorus, chloride, total coliform, and *E. Coli*.

The second sampling round at the Hodgkins Road outfall took place at approximately 6:00 am on April 1, 2004 in a moderate rainfall. The total coliform and *E. Coli* sample taken on April 1st was resampled at approximately the same time on April 14, 2004 because of a laboratory error. For both sampling events, the preceding day was marked by significant rainfall. Therefore these samples, in contrast to the October 15, 2003 samples, do not represent the "first flush." The samples were collected and delivered to the laboratory in the same manner as those collected on October 15, 2003 and were tested for the same constituents.

IIIB. Summary of Test Results from the Hodgkins Road Outfall

Table III.1 shows the 9 constituents that were found in detectable concentrations out of more than 100 analytes. The table also shows whether the analyte is regulated in drinking water and, if so, what the maximum contaminant level is (MCL; an enforceable standard for the protection of human health) and/or the secondary drinking water regulation (SDWR; a non-enforceable guideline regarding aesthetic effects such as taste and odor). It is very important to note that these MCLs and SDWRs apply to drinking water samples taken at the entrance to the distribution system. That is, they are applicable to treated drinking water. The Hodgkins Road outfall samples are raw water samples taken from a stormwater outfall pipe. Considerable attenuation of these dissolved contaminants would be expected if the sampled water traveled through the aquifer materials to the well intake. Subsequent treatment would reduce their concentrations even further or may remove them altogether. Therefore, comparisons between the detected concentrations shown in Table III.1 and the contaminant's respective MCL and or SDWR should be done with caution.

Table III.1: Wet Weather Sampling October 15, 2003: Hodgkins Road Outfall

Analyte	Detected Concentration	Regulated in Drinking Water?	MCL	SDWR
Chloride	7 mg/L	Yes		250 mg/L
Total Phosphorus	0.12 mg/L	No		
Total Coliform	>2400 MPN/100ml*	Yes	5%**	
E. Coli	770 MPN/100ml	Yes	**	
Copper†	0.003 mg/L	Yes	1.3 mg/L	1.0 mg/L
Lead†	0.006 mg/L	Yes	0.015 mg/L	
Nickel	0.001 mg/L	No		
Zinc	0.014 mg/L	Yes		5 mg/L
Benzo(a)pyrene	0.9 µg/L	Yes	0.2 µg /L	

* MPN is "most probable number"

** No more than 5.0% samples total coliform-positive in a month. Every sample that has total coliforms must be analyzed for fecal coliforms (e.g. *E. Coli*); no fecal coliforms allowed.

† Sampled at the tap

Total coliforms and *E. Coli* were present in the samples at relatively high concentrations (Table III.1). Total coliforms are bacteria that are not necessarily pathogenic but are ubiquitous in the environment and indicate the possibility of other microbial contamination. *E. Coli* more definitively indicates fecal contamination.

Benzo(a)pyrene, a polycyclic aromatic hydrocarbon (PAH), was also detected in a notable concentration (Table III.1). PAHs are a group of chemicals that are usually formed naturally during the incomplete combustion of coal, oil, gas, wood, garbage, or other organic substances, such as tobacco and meat. The laboratory notes in its quality control report that the result for benzo(a)pyrene in this sample is potentially "high biased" because of the performance of the analytical method for that run.

Table III.2 contains the test results from the second testing undertaken on April 1 and April 14, 2004. Table III.2 shows 13 constituents that were found in detectable concentrations out of more than 100 analytes. All of the constituents detected in the October, 2003 samples were also detected in April, 2004. Many of the recurrent detections are at comparable concentrations, but notable exceptions are the microbe, benzo(a)pyrene, and chloride concentrations. The April, 2004 *E. Coli* concentration is more than an order of magnitude lower than the October, 2003 concentration, and the recent benzo(a)pyrene detection fell just below the MCL. The October, 2003 benzo(a)pyrene detection exceeded the MCL. The lower concentrations of these two contaminants during the second round of sampling may reflect the fact that the first sampling round likely captured the "first flush" of contaminants from the land surface when concentrations tend to be highest. In contrast, chloride concentrations were higher in April, 2004 than October, 2003. This is an expected result considering the April, 2004 sample was taken shortly after the winter road salting season.

Table III.2: Wet Weather Sampling April 1, 2004: Hodgkins Road Outfall

Analyte	Detected Concentration	Regulated in Drinking Water?	MCL	SDWR
Chloride	25 mg/L	Yes		250 mg/L
Total Phosphorus	0.10 mg/L	No		
Nitrate	1.3 mg/L	Yes	10 mg/L	
Total Coliform	3000 MPN/100ml*	Yes	5%**	
E. Coli	11 MPN/100ml	Yes	**	
Arsenic	0.001	Yes	0.010 mg/L	
Chromium	0.002	Yes	0.1 mg/L	
Copper†	0.003 mg/L	Yes	1.3 mg/L	1.0 mg/L
Lead†	0.002 mg/L	Yes	0.015 mg/L	
Nickel	0.001 mg/L	No		
Zinc	0.012 mg/L	Yes		5 mg/L
Benzo(a)pyrene	0.15 µg/L	Yes	0.2 µg/L	
Di(2-ethylhexyl)phthalate	0.9 µg/L	Yes	6 µg /L	

* MPN is "most probable number"
** No more than 5.0% samples total coliform-positive in a month. Every sample that has total coliforms must be analyzed for fecal coliforms (e.g. *E. Coli*); no fecal coliforms allowed.
† Sampled at the tap

Four constituents detected in the second sampling round were not detected in the first—nitrate, arsenic, chromium, and Di(2-ethylhexyl)phthalate (DEHP). All were detected at concentrations well below their action limits. Nitrate forms in the soil typically after the application of nitrogen fertilizers. Like phosphorus, nitrogen is a common nutrient found in surface water related to urban and agricultural land uses. Both arsenic and chromium are naturally occurring metals that have a wide variety of human uses and occur relatively frequently in stormwater. DEHP is a synthetic chemical that is ubiquitous in the environment because it is used in plastics, but it can be broken down into harmless compounds by microorganisms in soil or water.

IIIC. Implications of Test Results

Both sampling rounds reveal the occurrence of common stormwater pollutants, most of which are at relatively low concentrations. Significantly, however, microbial contaminants (i.e., total coliforms and *E. Coli*) are occurring at modest to high concentrations. *E.Coli* is indicative of untreated sewage, especially at concentrations like those detected in the first sampling round. The microbial contamination is likely related to failed septic systems in the neighborhood drained by the Hodgkins Road outfall.

Aquifer materials like those of the Millbrook wellfield are effective at attenuating microbial contaminants, and subsequent disinfection at the treatment plant will mostly eliminate them. Nonetheless, reducing the concentrations of these contaminants in stormwater runoff is an important source water protection measure.

IV. Rockport Water Supply Emergency Response Plan

IV.A. Current Status of the Plan

The Rockport Watershed Protection Committee obtained a copy of the Town of Rockport Department of Public Works Emergency Contingency Plan dated April 2003. We reviewed this Plan as well as the recommended Plan components available on the website of the Department of Environmental Protection. Following are the findings from this review:

1. The DEP model Plan and the Rockport Plan were written to be used by knowledgeable, trained staff in the water treatment profession, and are not geared to be useful or useable by first responders. Resources and training need to be available to first responders;
2. Emergencies resulting from spills of hazardous materials, a fairly common problem to occur in this and most water watersheds, was not identified in any level of emergency;
3. The Rockport Plan did not contain the same definition of levels of emergencies as the DEP Plan;
4. Detail was missing on when shut-down and start-up procedures should be undertaken by the Rockport filtration plant operators;
5. No information was provided in the Rockport Plan regarding drought conditions and any new emergency procedures this might require
6. The Rockport Plan did not consider planning for possible terrorist events
7. The Town of Rockport Plan did not contain up-to-date contacts and phone numbers

The evaluation of these two Plans indicates that neither the Rockport Plan or the state model includes indications of emergencies that could result for the operations and maintenance of the MBTA commuter rail line within the 400' Zone I of the wellfield. This creates specific conditions that must be accommodated within the Rockport Plan. A spill incident that occurred during the preparation of this document that was informative. A small spill of diesel fuel occurred within the Zone 1 of the wellfield. The first responder was unaware of appropriate action to take to address the situation. Further, the event was not taken as an important occurrence to the staff charged with overseeing the Rockport Department of Public Works Emergency Contingency Plan. It was clear from this event that major efforts needed to be undertaken to update the Plan and train those responsible for its implementation.

IV. B. Recommended Changes to the Rockport Emergency Response Plan

Based on the evaluation and comparison of these two planning documents, the Rockport Watershed Protection Committee determined that as part of this planning effort, the Watershed Protection Committee would update the contact listings, and make the Rockport Plan document consistent with the current DEP model. This work is included in Appendix 4 as the Water Supply Emergency Contingency Plan, Town of Rockport, June 2004. Rockport departments responsible for overseeing this Plan and responding to such emergencies will begin a series of meetings to review the content of the Plan and make iterative improvements during the remainder of calendar year 2004.

The result of this effort should be an up-to-date Plan that contains the best information and approach available for Rockport. Further, the process of review of the Plan should result in better-informed and trained responders in all Town departments.

The Watershed Protection Committee, in the course of this review, came to the conclusion that the underlying levels of emergencies included in the DEP model do not fully describe potential emergency situations; they are inaccurate in implying the relative severity, importance, and gradation of the emergencies; and do not provide enough information on appropriate reaction to the first responder regarding any particular type or level of emergency. As a result, the Rockport Watershed Protection Committee is reluctant to go further than the updates in the attached draft in making the Rockport Plan more compliant with a state model that is not up to the task. The WPC recommends that the DEP initiate a comprehensive effort to overhaul its defined levels of emergencies to be of greater value for use by local communities.

V. Public Education About the Mill Brook Watershed

V. A. Role of Public Education on Watershed Issues

As described in Section II.C., Land Uses with the Mill Brook Watershed, the watershed contains 92 residential properties, 57 of which are connected to the Town's sewer and 35 of which have on-site septic systems. In addition, there are some multi-family and commercial activities located generally on the border of the Mill Brook wellfield's mapped Zone II. Further, there is significant use of the area directly abutting Loop Pond and the well field through an important recreational trail system that exists in the area.

There are many activities that residents can undertake that can unknowingly cause harm to the Town's drinking water supply. For example, the use of motorized vehicles in the Zone I can introduce contamination from fuels, and can destroy ground cover and encourage siltation of Mill Brook. Pet feces introduces coliform that can affect humans. Stormwater flows can transport contaminants from human habitation directly into Loop Pond and into the Zone I of the wellfield. The storm drain on the north side of Hodgkin's Rd. directly drains a high density residential area with failing septic systems. Failing septic systems can introduce microbial contamination from human waste directly into surface and ground water supplies. Sampling results indicate that stormwater discharges from this neighborhood has fecal contamination. Overuse of fertilizer and pesticides in these yards in the Hodgkin's Rd. area could also find their way into the wellfield. Prevention of some of these byproducts of human habitation is key to maintaining water quality.

Providing information to watershed residents and towns-people regarding the location of the wells, the importance of their contribution to the Town's water supply, and measures to protect them is an important element of the Plan.

VB. Purpose and Process of Brochure Development

The brochure that has been produced as part of this Plan, attached in Appendix 3, was designed to educate town residents regarding the function, contribution, and protection of the Mill Brook wells and watershed. It was also designed to dovetail with the purposes of updating the Rockport Emergency Response Plan by informing residents about threats and providing the contact information they will need to report problems in the watershed.

The brochure was drafted using information provided by the Department of Public Works regarding the location and functioning of the wellfield. Brochures and public information available on the Department of Environmental Protection website was reviewed and was tailored to Rockport conditions. The draft text was reviewed and edited by the Committee, and layout services were provided by BioEngineering Group.

Seven hundred copies will be printed and either have been or will be distributed. Copies of the brochure were distributed to each household and business within the watershed. Additionally, copies have been placed in the Conservation Commission office, the Department of Public Works, the Rockport Water Treatment Plant, and in Town Hall. Copies will also be made available at a variety of public meetings on topics associated with water supply protection. The brochure will be made available at the fall 2004 Town Meeting in association with the efforts to pass the proposed Watershed Protection Overlay District bylaw.

VI. Rockport Bylaws to Protect Mill Brook Watershed

VI.A. Watershed Protection Overlay District

The Town of Rockport first passed its Watershed Protection Overlay District (WPOD) bylaw in 1989. It has been amended several times since then to broaden its applicability geographically. The bylaw was designed to address all watersheds in Rockport that contributed to Rockport's existing and potential municipal water supply, both wells and surface water supply. The WPOD restrictions were defined as setbacks from edges of surface water bodies, so they did not appropriately apply to the ground water provided by the Mill Brook wells.

The Massachusetts Department of Environmental Protection, in the 15 years since the development of the Rockport Watersupply Protection Overlay District bylaw, has honed its own information and regulations regarding the protection level required of its various classifications of land for protection of water supplies. These regulations are found in 310.CMR 22.21. DEP has defined Zones I, II, and III around well water sources, and Zones A, B, and C around surface water sources. For example, Zone I, the 400' diameter circle around each well in the Mill Brook wellfield, prohibits any development except that associated with water withdrawal for the municipal water supply. Additional required restrictions and recommended restrictions for Zones I and II have also been added by DEP over the years for communities to add to their bylaws for surface and groundl water protection.

The Rockport Watershed Protection Overlay District bylaw was reviewed and analyzed for its current compliance with DEP regulations, for its applicability to both surface and well water supplies, for its applicability to conditions in the Town of Rockport, and for clarity of presentation and ease of use. This review included reviews of model bylaws provided by other entities. The Ipswich, MA bylaw that was recently developed with the input and comments from DEP staff was carefully reviewed as it was designed to address restrictions pertaining to both surface and well water supplies.

The review showed that the Watershed Protection Overlay District needed to be overhauled to reflect the Town's new understanding of issues and needs, and to be in step with DEP regulations. A draft bylaw is attached in Appendix 4. The new bylaw is designed to address many issues that were not addressed previously, including:

1. A set of definitions that provides a grounding to anyone reading the bylaw. It includes definitions of all zones being protected and key definitions of items pertinent to water supply protection;
2. The scope of authority of the bylaw as an overlay district is clearly defined;
3. The boundaries of watersheds on the existing zoning map including the Mill Brook watershed will be adjusted based on the digital mapping completed as part of this plan;
4. Owners of properties straddling the line of the District, or appealing the inclusion of some or all of their lot within the WPOD, may apply for a special permit to undertake uses allowed only in the underlying zoning as long as the application for the special permit is accompanied by documentation prepared by professionals who are experienced in delineating hydrogeologic zones and/or wetlands in Massachusetts, and have one or more of a set list of credentials listed in the new bylaw;
5. A table of allowed uses showing in which of the various water supply zones the use is allowed, either by right or by special permit. This applies to all watersheds in Rockport, both wells and surface water supplies;
6. The table of uses provides additional detail on dealing with septic systems, storing hazardous wastes, and storing animal manures. It also includes additional restrictions on impervious surfaces, new directives for storing petroleum products, and several other changes.

The WPC is meeting with the Rockport Planning Board, the Department of Public Works Commissioners, the Conservation Commission, and the Board of Selectmen to present the results of this planning effort and to explain the proposed changes to the Watershed Protection Overlay District. It is the goal of the Committee to present the new bylaw to replace the old bylaw in its entirety at fall Town Meeting in 2004.

VI.B. Floor Drain Bylaw

Rockport does not currently have a bylaw addressing the locations of, and restrictions on, floor drains. While floor drains do not present a significant threat to the Mill Brook watershed, several floor drains possibly exist within the watershed. As part of this planning effort, the MA DEP's model floor drain bylaw was preliminarily adjusted for the Town of Rockport and provided to

the Rockport Health Agent as a draft. The bylaw provided to the Board of Health is attached in Appendix 6. Section VII. includes the recommendation that the Rockport Board of Health refine and adopt the model bylaw provided herein.

VII. Summary Recommendations

Because of the breadth of this planning effort, many recommendations have emerged that can improve water supply protection in the Mill Brook watershed. These recommendations organize into the following categories: Improve bylaws and regulations; Enforce existing local, state, and federal laws and regulations that protect the watershed and water quality; Protect Land Necessary for water supply protection through ownership or conservation restriction; Protect water supply through control of elimination of contamination; and Restore land in the Mill Brook watershed to increase water supply protection.

1. Improve Bylaws and Regulations Affecting the Watershed

1. A. **Floor Drain Regulations:** The Rockport Board of Health can undertake a review of the draft floor drain regulations provided as part of this project and included in Appendix 6. Based on the target of the Commonwealth to have all Massachusetts communities incorporate floor drain regulations, this Plan strongly encourages the Board of Health to finalize and approve floor drain regulations. This adoption, while most important when wells are the source of drinking water, it will be of benefit to all of the water supply watersheds in Rockport.

1.. B. Watershed Protection Overlay District:
The draft version of the Rockport Water Supply Protection Overlay District has been discussed with the Rockport Planning Board. This draft would fully replace the existing WSPOD. With the favorable response received from the Planning Board, this WPC is. recommending that this draft, with continuing input, public hearings, and improvements be on the Fall 2004 Town Meeting warrant for passage.

1..C. Applicability of the Water Supply Protection Overlay District: A significant portion of the Watershed for Loop Pond and Mill Brook is located over the town line in Gloucester. Likewise, a significant portion of a watershed protecting Gloucester's drinking water supply is located in Rockport abutting the Mill Brook watershed. The Committee recommends that the Town of Rockport work with the City of Gloucester to review both communities' water supply protection zoning, and to seek to apply each communities' zone to the other's drinking water supply watershed.

1..D. Increase Restrictions on Subdivision Drainage Features abutting wetlands within water supply watersheds: Subdivision regulations detail how and where drainage features must be built within a subdivision. These portions of the subdivision regulations, treated in Section 5.3.1. should be amended to further describe construction

requirements for drainage features and associated set-backs from water supply and wetlands features.

1.E. Amend the Rockport Zoning Bylaw to Include a Maximum Percentage of Impervious Surface: During 2003, the Rockport Planning Board attempted to add "maximum lot coverage" to the zoning bylaw to reduce run-off from an overdeveloped site where remaining open land is needed for on-site infiltration to replenish ground water supplies. This provision failed to pass at Town Meeting. The Planning Board would like to reintroduce it for the mapped watersheds where the connection is clear between reducing run-off and increasing water supply recharge, and improving water quality by reducing contaminants picked up in stormwater run-off.

1.F. Add a provision to the General Bylaw governing restrictions on the handling of hazardous wastes and contaminants at construction sites:
Paints, fuel for equipment, temporary outhouses????

1G. Fix the SWAP Map:
Work with the MA Department of Environmental Protection to update and refine the SWAP map. As part of this project it was recognized that the current state-issued map likely has a number of confusing errors.

2. Enforce Existing Local, State, and Federal Laws and Regulations that Protect the Watershed and Water Quality

2.A. Enforce the MA DEP Asphalt, Brick and Concrete permitting regulations against residential properties within the watershed with illegal fill: Several of the residential properties on Hodgkins Road have very steep slopes going down to Loop Pond leaving them with very little backyards. Some of these have over the years been adding fill to the top of the slope to extend their backyards. Rockport should cooperate with DEP in proceeding to enforce these regulations as appropriate against properties on Hodgkin's Road

2.B. Determine if there is currently contamination within the Zone I resulting from the MBTA station:
Investigate potential contamination within the Zone I resulting from operation and maintenance of the MBTA tracks and service.

2.C. Implement Proactive Inspection of Septic Tanks:
Investigate model programs for septic system management that includes proactive inspections of septic systems and ongoing activities to assess and maintain these systems.

3. Protect Land Necessary for Water Supply Protection through ownership or Conservation Restriction

3.A. **Acquisition of properties in the Mill Brook watershed:** Efforts should be undertaken to protect land within the Mill Brook watershed from development in order to protect the quality of water in the Mill Brook wells. Rockport should consider all parcels worthy of protection. Parcels that become available to protect could be acted upon as part of this initiative. Ownership of parcels in the Mill Brook watershed have been reviewed to identify any parcels that may be in tax title and to identify owners of key undeveloped parcels within the watershed. Review of key characteristics including slope, proximity, and size, will also assist in identifying key undeveloped parcels that, if developed, could have a negative impact on water quality. In the spring of 2004, Rockport accepted the donation of 3 parcels within the watershed.

3.B. Acquiring conservation restrictions on parcels in the Mill Brook watershed: Some parcels in the Mill Brook watershed already contain some development, but are large with significant land still undeveloped and in close proximity to the wellfield and Loop Pond. The Town of Rockport should seek conservation restrictions on portions of these properties to further protect the Mill Brook wellfield and watershed:

4. Protect Water Supply through Control or Elimination of Contamination

4A. Exclude motorized uses in the undeveloped portion of the watershed: On occasion, there is evidence of use and abuse of the land and trails in the area of Loop Pond and the wellhead area by ATV users. This use destroys plant cover, increases run-off and siltation in Loop Pond, and introduces a source of fuel and oil into the sensitive areas of the Mill Brook watershed. Discussion occurred during the spring of 2004 regarding options for eliminating the presence of ATV's. Solutions included the use of boulders to block access, and signage to be clear that ATV use is prohibited. It is recommended that both options be utilized in the short run to attempt to eliminate this problem, and that long term solutions be identified, to the extent practicable, to eliminate use of motorized vehicles from the undeveloped portions of the watershed.

4B. Exclude motor vehicles from the driveway area at the pump house: Motor vehicles that travel down Tarr's Lane will get to the bottom of the hill near the pump house and have to turn around. It is possible to drive up to the pump house. A gate should be placed across this access area to prevent turn-arounds or parking within the Zone I of the Mill Brook wells. It should be available to be accessed by personnel from the Rockport filtration plant and other DPW employees as appropriate.

4C. Produce and post informative signs regarding the Mill Brook watershed: Signs denoting entry or presence in the Mill Brook watershed, a brief description of the value of the watershed, and a list of "do's and don'ts" will provide the basic and ongoing information users need regarding protection of water quality damaging behavior. Such behavior that would be listed include leaving dog waste in the immediate area, and use of ATV's.

4C. Reduce the use of hazardous products by households in the Mill Brook watershed: The discussion regarding public education (Section V) describes the type of

hazardous products often kept and used by households. The informative brochure attached as Appendix 3 was deemed to be the best way to inform residents regarding the importance of the Mill Brook watershed to the Town, and basic efforts they can make to protect it. In addition to the short-term distribution of the brochures described in Section V, additional copies are recommended to be printed when the current supply runs out using funds from future DPW budget. These copies are recommended to be available in Town Hall, provided to realtors brokering property in the Mill Brook watershed area, and Rockport Public Library.

4D. Reduce the detrimental impacts of emergency conditions in the watershed: An appropriate and updated Emergency Response Plan is important in assuring that any potential spills in the watershed are minimized in their negative impact on the sources of drinking water in Town and the day-to-day quality of the drinking water. Section IV describes the current conditions regarding the Emergency Contingency Plan. This effort includes an intermediate updating of the Plan (attached as Appendix 4) but also recommends that Rockport train all first-responders and filtration plant operators so that communication and responses to real emergencies can be handled as well as possible to minimize contamination of Rockport's drinking water supply.

4.E. Reduce the possibility of contamination from the MBTA commuter rail line: During the ongoing planning process for improving the Rockport station through the Major Investment Study, work to incorporate upgrading railroad ties as part of the planned improvements. Currently, there are creosote ties for the entire length of the track within the watershed overall and within the Zone 1 of the Mill Brook wells. These ties can and do ooze creosote. Replacing these ties, minimally within the Zone 1, with concrete ties, will eliminate this serious potential for contamination from the affected area.

4F. Through the station planning process noted above, and the annual review with the Rockport Conservation Commission, work with the MBTA to remove any potential contaminants from the station area, and in the future to remove them on a regular basis:
The MBTA station has a great deal of discarded construction items, junk, and litter, including railroad ties, brake shoes, and other items. Located within the Zone 1, these items over time can degrade water quality. The MBTA should develop a routine to dispose of these items on a regular basis to protect the water quality in the Mill Brook wells.

4G. Reduced Salt application:

Evaluate the existing winter sand and salt applications and identify opportunities to minimize these potential contaminants.

5. Restore Land in the Mill Brook Watershed to Increase Water Supply Protection

5.A. Restore town-owned land (Map 12, Lots 47 and 48), known as Tarr's Lane gravel pit: This site was previously used for a graveling operation and is planned to be restored to a fields and forested land use. Volunteer efforts had previously been made to add compost and seed native grasses to a 4,000sf portion of these parcels covering several acres. This effort has been successful but further efforts need to be made to regrade some of the parcel, add additional volumes of high organic content compost covered by a layer of topsoil. Some members of the Mill Brook Watershed Committee are currently seeking volunteers and funding to undertake this effort, which is estimated to cost approximately $12,000, with $4,000 from the Community Preservation Fund and $8,000 in in-kind volunteer services and the Rockport Department of Public Works.

5.B. Monitor ongoing restoration of slope at Lattof Lane subdivision: This site was also formerly part of the Tarr's Lane gravel operation, but had more recently been the location for storage of vehicles and other potentially harmful objects. The subdivision developers have graded some of this site, have completed the installation of infrastructure, and installed planting on the graded slope and surrounding the retention basin at the top of this slope. Some of these plantings were installed late, some were quite small, and others are vulnerable to ATV's. The Rockport DPW, and the Planning Board through consulting engineers during the course of construction of the Subdivision, should continue to monitor the health of these plantings and identify areas for replanting as necessary.

Appendix 1

References/Interviews

References

Talkington Edson Environmental Management LLC. **Source Water Assessment Program Conceptual Zone II Delineation Tubular Wellfield**. PWS 3252000-01G, Rockport, MA. Prepared for Massachusetts Department of Environmental Protection. October 1999.

Office of Wetlands, Oceans and Watersheds of the U.S. Environmental Protection Agency. **Tools for Watershed Protection: A Workshop for Local Governments.**

Town of Rockport, Department of Public Works. **Emergency Contingency Plan.** April 2003.

Massachusetts Department of Environmental Protection.

Making Wellhead Protection Work in Massahcusetts. A Guide for Developing Local Groundwater Protection Controls. December 1997.

Developing a Local Wellhead Protection Plan: A Guidance Document for Communities and Public Water Suppliers. Revised November 2001.

Model Floor Drain Regulation
Fact Sheet: Water Suppliers Protect Drinking Water, January 2002
Fact Sheet: Residents Protect Drinking Water, January 2002
Fact Sheet: Planning and Implementing a Local Floor Drain Control, March 2002

Cape Cod Commission. **Model Aquifer Protection Bylaw**.
http://www.capecod.com

Town of Ipswich. **Zoning Bylaw.**

Appendix 1

Interviews

John Tomasz, Rockport Director of Public Works

Larry Wonson, Rockport Wastewater Treatment Plan

Roy Lee, Rockport Water Filtration Plan

Jim Doyle, Rockport Fire Chief

Leslie Whelan, Rockport Health Agent

Paul Niman, Security Coordinator, Massachusetts Department of Environmental Protection, Drinking Water Program

Catherine Hamilton, Massachusetts Department of Environmental Protection, Drinking Water Program

David Clough, Massachusetts Bay Transit Authority

Dick Gonet, Massachusetts Bay Transit Authority

Glenn Gibbs, Ipswich Town Planner

Appendix 2

Glossary

Capture Zone. The aquifer area from which water is captured by a pumping well.

Ground water. Water in the ground that is in the zone of saturation, from which wells, springs, and ground-water runoff are supplied. (After Meinzer, 1949, p. 385.)

Zone A. a) the land area between the surface water source and the upper boundary of the bank; b) the land area within a 400 foot lateral distance from the upper boundary of the bank of a Class A surface water source, as defined in 314 CMR 4.05(3)(a); and c) the land area within a 200 foot lateral distance from the upper boundary of the bank of a tributary or associated surface water body.

Zone B. The land area within one-half mile of the upper boundary of the bank of a Class A surface water source, as defined in 314 CMR 4.05(3)(a), or edge of watershed, whichever is less. Zone B always includes the land area within a 400 ft lateral distance from the upper boundary of the bank of the Class A surface water source.

Zone C. The land area not designated as Zone A or B within the watershed of a Class A surface water source, as defined in 314 CMR 4.05(3)(a).

Zone I. The area encompassing a maximum 400-foot radius around the wellhead (assuming a greater than 100,000 gpd withdrawal rate).

Zone II. The entire extent of the aquifer deposits that could fall within, and upgradient from, the production well's capture zone based on the predicted drawdown after 180-day drought conditions at the approved pumping rate.

Interim Wellhead Protection Area (IWPA). The area encompassing a ½ mile radius around a public supply well that does not have a delineated Zone II.

Zone III. The entire watershed upgradient of Zone II.

Appendix 3

Notes for Land Use Map

The following land use types from the Rockport & Gloucester Assessors CAMA system have been condensed into the 10 land use types below for development of the Land Use Map:

Entire Watershed – 224 parcels, 448.6 acres

Residential Developed – 113 parcels, 53.6 acres – 11.9% of watershed
Single Family
Condominium
Two Family
Three Family
Multiple Houses on one parcel
Four to Eight Units
More than Eight Units
Multiple Houses
Apartment – 4 Units
Apartment – 8 Units & up
Church (residence)

Commercial – 4 parcels, 1.1 acres – 0.2% of watershed
Restaurant
Trucking Terminal
General Office Building

Industrial – 2 parcels, 2.2 acres – 0.5% of watershed
Factory
Land – Integral part of manufacturing operation

Municipal (non protected) – 39 parcels, 58.2 acres – 13.1% of watershed
Municipal – Owned by Rockport
Municipal – Owned by Gloucester, lot in Rockport

Protected Open Space – 23 parcels, 249.7 acres – 55.7% of watershed
Municipal Undevelopable (Gloucester)
Conservation Commission (Gloucester)
Municipal (Deed Restrictions – Rockport)
Non Profit

Transportation – 9 parcels, 19.0 acres – 4.2% of watershed
Commonwealth of Mass – MBTA tracks

Appendix 3

Utility – 4 parcels, 2.2 acres – 0.5% of watershed
Electric Right of Way
Electric Substation

Undeveloped Private – 23 parcels, 11.6 acres – 2.6% of watershed
Developable Land
Potentially Developable Land
Undevelopable Land

Municipal Tax Title – 3 parcels, 47.2 acres – 10.5% of watershed
Municipal (parcels identified by Selectmen 6/13/03)

Unknown – 4 parcels, 3.8 acres – 0.8% of watershed
No Records in CAMA database

Where Does Rockport Get Its Drinking Water?

Rockport's drinking water comes from surface water supplies and from one well field located in the Mill Brook watershed. The Mill Brook well field at the end of Apple Cart Rd., three wells located next to Mill Brook and the pump house, and the Mill Brook watershed are depicted on the Mill Brook Watershed Map on the other side of this brochure.

The Mill Brook well field provides almost 20% of the drinking water that is used by Rockport residents. Although this water is treated before it comes into your home, it is important that the source water be as clean as possible to reduce treatment costs and to keep out contaminants that are difficult to treat.

The Mill Brook watershed wells are quite shallow, only about 20-25 feet underground, so they are particularly vulnerable to contamination. Loop Pond, a surface water body, is also located in the Mill Brook watershed (see the map). It can be used to augment Rockport's water supply during water emergencies and must be protected from contamination and degradation.

As a resident of Rockport or a visitor to town, you play an important role in protecting this water supply. Please read this brochure to learn about the Mill Brook watershed and what you can do to protect it.

How Does Water Get from Mill Brook to Your Home?

The wells in the Mill Brook watershed produce about 43 million gallons of water each year. These wells provide three months worth of water supply for the Town of Rockport.

When water is pumped from the Mill Brook wells, it is conveyed either directly to the water filtration plant, or it may be held in Cape Pond before being treated and used. Rockport's drinking water is processed at the water filtration plant through treatment facilities employing a variety of treatment technologies. Then it goes to households and businesses in Rockport to drink and to use for washing and other purposes.

How Can You Help Protect the Mill Brook Watershed Wells and Rockport's Water Supply?

When You Are Walking in the Mill Brook Watershed

- ✔ Please take plastic bags to carry away your pet's waste. Please dispose of it in your own household bathroom or garbage.
- ✔ Notice signs of oil or other contaminants in Loop Pond or elsewhere on the trails in the area. If you suspect such contaminants, please report it to Rockport Water Treatment Plant (number on back of brochure).
- ✔ If you observe any signs of contaminants on the MBTA tracks, call the Rockport Water Treatment Plant.
- ✔ Observe any signs of dumping of any kind and report it to the Rockport Police.

When You Are in Your House

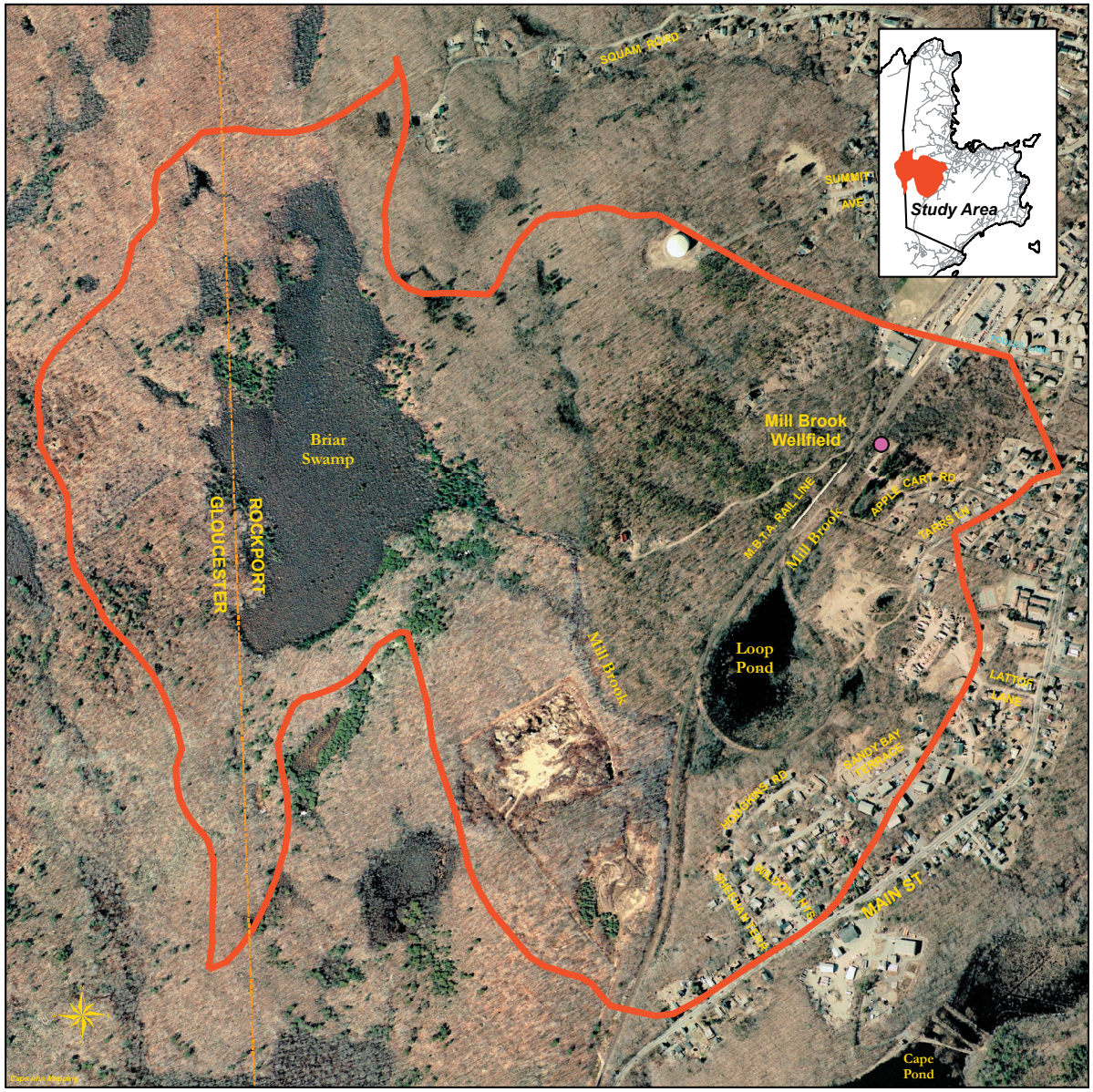
If you have a septic system serving your house, whatever you put down your drain can end up in the Mill Brook wells.

- ✔ Never put household hazardous waste down your house drain and into your septic system.
- ✔ If you have a septic system, make sure it is in working order and there is no odor or seepage on the surface. If there is, please report it to the Rockport Board of Health and contact someone to evaluate your system.
- ✔ Maintain your septic system in good order; have it inspected regularly, at least once every 3-5 years, unless there is an evident problem.
- ✔ Read labels and try to replace hazardous materials in your home with safer products.
- ✔ Improve how you store your home heating fuel by building a 6" concrete apron under the fuel oil tank to prevent movement of spilled fuel oil, after consultation with the Rockport Fire Department.

When You Are in Your Yard

Your garage and shed may store hazardous wastes that should not get into the water supply. These hazardous wastes may include oil-based paints; roofing material; gas and oil for lawn-mowers, cars and boats; fertilizers and pesticides for your lawn and garden; and other similar products.

- ✔ Avoid changing automotive oil in your yard. Even though you are careful, some may spill from the containers you use to recycle the oil.
- ✔ Take any excess oil to a hazardous waste pick-up day - do not pour them on the ground or down a street drain.
- ✔ Apply lawn and garden fertilizer and pesticides sparingly. Never apply more than recommended and never pour excess on the ground or into street drains. Save any excess for a hazardous waste pick-up day.
- ✔ Look for fluid stains on your driveway that might indicate that your car or other equipment may be leaking oil, and repair leaks quickly.
- ✔ Avoid adding any more "impervious" surfaces to your yard, such as paving. The water in the wells comes from infiltration from the wooded areas and all the yards within the Mill Brook watershed.
- ✔ Do not store automobiles or other vehicles in your yard that are not maintained; they may leak fluids without your notice.



FOR MORE INFORMATION:

Rockport Water Filtration Plant
978 546-6992
Rockport Police Department
978 546-3993
Rockport Board of Health
978 546-3701
Rockport Department of Public Works
Call for Hazardous Waste Pick-up Day
978 546-3525

INFORMATIVE WEB SITES

www.mass.gov/dep/recycle/hproduct.htm
www.mass.gov/dep/brp/
www.epa.gov/safewater/

FOR A COPY OF THE RECENT MILL BROOK WELLHEAD PROTECTION PLAN:

www.town.rockport.ma.us/

Protecting Rockport's Mill Brook Watershed

Rockport Watershed Protection Committee and Department of Public Works

Prepared with funds from the Massachusetts Department of Environmental Protection

Water Supply Emergency Contingency Plan

DRAFT

Town of Rockport,
Massachusetts

June 2004

TABLE OF CONTENTS

INTRODUCTION

An *Emergency Response Plan* is a vital component for an effective and safe water supply operation.

In this document we will differentiate emergency situations according to the following criteria:

Level I — Routine Problems
These incidents are minor disruptions to the water system that affect 10% or less of the system and are anticipated to be repaired/resolved within 24 hours or less.
Examples: Water main breaks and mechanical problems at pumping stations.

Level II — Alert/Minor Emergencies
These incidents are more significant disruptions to the water system that affect 50% or less of the system and are anticipated to be repaired/resolved within 72 hours or less.
Examples: Local total coliform bacteria detection, major main breaks, multiple main breaks, major mechanical problems at pumping stations/treatment facility, or failure of chemical feed systems.

Level III — Major Emergencies
These incidents are very significant disruptions to the water system that affect more than 50% of the system and/or are anticipated to require more than 72 hours to be repaired/resolved. Major emergencies may require a Declaration of Water Supply Emergency and/or a Boil Water Order, Do Not Drink Order or Do Not Use Order
Examples: Break in major transmission main, loss or failure of treatment facility, loss of source (dam break, water supply shortage, contamination, etc.), loss of pressure in system, widespread total coliform bacteria outbreak, fecal coliform or E. Coli detection, or acts of vandalism.

Level IV — Natural Disasters
These incidents are generally caused by a widespread meteorological or geological event that disrupts the water system affecting more than 50% of the system and/or requiring more than one week for recovery of services. Such events may cause structural damage to a treatment facility or contaminate a source with untreated sewage, toxic chemical, or radioactive material. A Declaration of Water Supply Emergency and/or a Boil Water Order, Do Not Drink Order or Do Not Use Order are likely to be required.
Examples: Hurricanes, tornadoes, earthquakes, or floods.

Level V — Nuclear Disasters/Terrorist Acts
These incidents involve large and uncontrolled releases of radioactive material or compounds into the environment/water supply source or deliberate acts that impair a water system (i.e. terrorism). In the case of nuclear disaster, surface water supplies within a 50-mile radius of a nuclear power plant experiencing such a release may be immediately contaminated. Groundwater supplies may remain safe for a period of time. A Declaration of Water Supply Emergency and/or a Do Not Drink Order or Do Not Use Order are likely to be required.
Examples: Nuclear power plant release to the environment or deliberate release of highly toxic materials to a water supply.

DEFINITIONS

For the purposes of this document, the following definitions apply:

Emergency	A situation or event, natural or man-made, which causes or threatens to cause damage to a water supply system such that there will be a disruption of normal water supply functions. The effects can be on a portion or all of the system and may require an immediate action in order to protect public health.
Response	The actions taken during an emergency to minimize the impact of the emergency, protect the water supply, and return the water system to normal operating conditions.
Boil Water Order, Do Not Drink Order, Or Do Not Use Order	Order issued under MGL c. 111, sec. 160 by the Department in accordance with DWS Policy 87-06.
Declaration of State Of Water Supply Emergency	Order issued under MGL c. 21G, sec. 15, 16, and 17 by the Department in accordance with DWS Policy 87-05.

HOW TO USE THIS PLAN

1. During an emergency, the first step that should occur must take is to **identify the emergency according to its severity using a Level I, II, III, IV, and V** status with Level I being routine problems such as main breaks, and Level V being a nuclear disaster or major terrorist act. The description of these levels is contained in the INTRODUCTION portion of the handbook. **Be aware that the level of the emergency may change during the incident. If this occurs, the Rockport Treatment Plant (RTP) administration must adjust its response accordingly.**

2. The level of the emergency determines the appropriate action to be taken. After determining the level, the RFP can turn to the appropriate section of the Plan to find the **procedures to be followed**. Each level has a separate section to assist the RFP in responding to the emergency. For example, if a Level III emergency is declared it could mean that there is serious threat to a dam, reservoir, tank, or treatment facility; power loss in a major pumping system; unsafe water supply in any pressure zone; breakage in a large trunk line; or contamination by infiltration. The following are the steps that would be taken in such a case.

3. The initial response would be to begin a documentation log to describe the emergency. The next step would be to investigate and evaluate the emergency and decide if it is a bacterial contamination, chemical contamination, or a systems failure. Each would have their own set of methods to follow but they both would basically activate a response team, notify proper local and state authorities and outside personnel or agencies for advice and assistance. Boil orders may be issued or outside water may be trucked in or emergency sources may be utilized if needed. Decisions are made at that time but all are planned in advance and written up in the Rockport ERP.

4. Once the cause of the emergency has been determined and approvals obtained, **work is initiated to correct the problem.** Informing the public about the emergency is accomplished through the electronic local/regional media. All contact persons and their phone numbers are listed in the ERP. Contact persons include fire, police, town officials, hospitals, media, contractors, state agencies and federal agencies. Coordinating the outside personnel and agencies working on the response should follow the flow charts found in the ERP. All forms and checklists are also found in the ERP. One set of these forms and checklists is to be sent to the DEP and the other is to be kept on file at the PWS.

To insure this information is current, updates this information annually. Also, during their regularly scheduled Sanitary Surveys this information is reviewed and changes made to keep it current.

LEVEL I: EMERGENCY RESPONSE PROCEDURES

Routine Problems These incidents are minor disruptions to the water system that affect 10% or less of the system and are anticipated to be repaired/resolved within 24 hours or less. The supply is reduced by routine circumstances which can be handled easily by utility personnel.

Examples: water main breaks and mechanical problems at pumping stations, including a power failure; minor coliform contamination; minor spill of hazardous substances.

Initial Response:

1. Begin documentation log (Emergency Response Checklist) at first report of the problem (Appendix X).

2. Investigate problem and evaluate the situation to determine the level of emergency.

Response Procedures:

3. Activate emergency response team and respond in accordance with the Emergency Response Plan

4. Complete the Emergency Response checklist and attach necessary forms/memoranda for each situation.

5. Maintain records of all activities throughout the incident. Retain records for future reference.

6. Monitor resolution of the emergency and take appropriate action if the level of the emergency changes.

Notes:

1. **If a violation requiring a Tier 1 Public Notice in accordance with 310 CMR 22.16 occurs, the PWS must contact and consult with DEP staff within 24 hours of the public water system first learning of the violation.**
2. **If a coliform bacteria violation has occurred, the public water system must file a Coliform Violation Evaluation Survey (Appendix H) with the local DEP regional office. This survey will not be used for compliance purposes but will provide DEP with valuable information on the cause and corrective actions for coliform bacteria violations.**

LEVEL II: EMERGENCY RESPONSE PROCEDURES

Alert/Minor Emergencies These incidents are more significant disruptions to the water system that affect 50% or less of the system and are anticipated to be repaired/resolved within 72 hours or less.

Examples: Local total coliform bacteria detection, major main breaks, multiple main breaks, major mechanical problems at pumping stations/treatment facility, or failure of chemical feed systems.

Initial Response:

1. Begin documentation log (Emergency Response Checklist) at first report of the problem.

2. Investigate problem and evaluate the situation to determine the level of emergency.

Response Procedures:

3. Activate emergency response team and respond in accordance with the Emergency Response Plan.

4. Contact local responsible officials and authorities, including the DEP Regional Office, to inform them of conditions in the system and discuss any special actions that may be required. Such required actions may include, but are not limited to:
   - Collection of special water quality samples related to the nature of the emergency.
   - Collection of appropriate water quality samples at sites throughout the distribution system where problems have occurred. These samples must be taken both during and after the incident. If the problem is determined to be coliform bacteria related, follow the Coliform MCL Violation Determination flow chart contained in Attachment G.
   - Provide notification to parties affected by the incident.
   - Provide an alternate source of water to those affected by the incident, if needed.
   - Contact local news media to inform them of incident, if needed.
   - Provide Public Notification of any violations of DEP regulations, as needed.

5. Contact local responsible officials and authorities, including DEP Regional Office, to inform them of completion of repairs and results of all water quality testing.

6. Maintain records of all activities throughout the incident. Retain records for future reference.

7. Monitor resolution of the emergency and take appropriate action if the level of the emergency changes.

Notes:

1. **If a violation requiring a Tier 1 Public Notice in accordance with 310 CMR 22.16 occurs, the PWS must contact and consult with DEP staff within 24 hours of the public water system first learning of the violation.**
2. **If a coliform bacteria violation has occurred, the public water system must file a Coliform Violation Evaluation Survey (Appendix H) with the local DEP regional office. This survey will not be used for compliance purposes but will provide DEP with valuable information on the cause and corrective actions for coliform bacteria violations.**

LEVEL III: EMERGENCY RESPONSE PROCEDURES

Major Emergencies

These incidents are very significant disruptions to the water system that affect more than 50% of the system and/or are anticipated to require more than 72 hours to be repaired/resolved. Resolution of the problem may beyond the ability of the utility's personnel to handle. Major emergencies may require a Declaration of State of Water Supply Emergency and/or a Boil Water Order, Do Not Drink Order or Do Not Use Order.

Examples: Break in major transmission main, loss or failure of treatment facility, loss of source (dam break, water supply shortage, contamination, etc.), loss of pressure in system, widespread total coliform bacteria outbreak, fecal coliform or E. Coli detection, or acts of vandalism, contamination from major spill of hazardous substance..

Initial Response:

1. Begin documentation log (Emergency Response Checklist) at first report of the problem.

2. Investigate problem and evaluate the situation to determine the level of emergency.

Response Procedures for Level III - Bacterial Contamination:

3. Initiate consultation with DEP and follow Public Notification requirements.

4. Activate emergency response team and respond in accordance with the Emergency Response Plan to collect samples and conduct preliminary analyses to determine potential contamination of the water supply. Use the data to follow the Coliform MCL Violation Determination flow chart contained in Attachment G.

5. Contact local responsible officials and authorities, including the DEP Regional Office, to inform them of conditions in the system and discuss any special actions that may be required. Such required actions may include, but are not limited to:

    - Collection of special water quality samples related to the nature of the emergency.
    - Collection of bacteria samples at sites throughout the distribution system where problems have occurred. These samples may be taken both during and after the incident. If the problem is determined to be coliform bacteria related, follow the Coliform MCL Violation Determination flow chart contained in Attachment G.
    - Provide notification to parties affected by the incident.

- With DEP approval, provide an alternate source of water if needed. Alternative water sources should be identified in the Emergency Response Plan and may include bottled water, interconnections with other water systems, tanked water, etc.
- Contact local news media to inform them of incident, if needed.
- If DEP issues a Declaration of State of Water Supply Emergency, Boil Water Order, Do Not Drink Order or Do Not Use Order, follow necessary procedures.

6. Once problem is identified, initiate actions to resolve the problem.

7. Contact local responsible officials and authorities, including DEP Regional Office, to inform them of completion of repairs and results of all water quality testing.

8. Maintain records of all activities throughout the incident. Retain records for future reference.

9. Monitor resolution of the emergency and take appropriate action if the level of the emergency changes.

Response Procedures for Level III - Equipment/System Failure:

9. Activate emergency response team to evaluate the extent of the problem and determine the type and quantity of support needed to initiate corrective action.

10. Contact local responsible officials, including DEP Regional Office, to inform them of conditions in the system and discuss any special actions that may be required. Such required actions may include, but are not limited to:
    - Conduct preliminary water quality analyses to determine potential contamination of the water supply as a result of the system failure.
    - Provide notification to parties affected by the incident.
    - With DEP approval, provide an alternate source of water if needed. These include connection to the Gloucester public water supply (see Attachment X) or ?????bottled water, tanked water, etc.
    - Contact local news media to inform them of incident, if needed.
    - If DEP issues a Declaration of State of Water Supply Emergency or Boil Water Order or Do not Drink Order, follow necessary procedures.

11. Once problem is identified, initiate actions to resolve the problem.

12. Contact local responsible officials and authorities, including DEP Regional Office, to inform them of completion of repairs and results of all water quality testing.

13. Maintain records of all activities throughout the incident. Retain records for future reference.

14. Monitor resolution of the emergency and take appropriate action if the level of the emergency changes.

Notes:

1. **If a violation requiring a Tier 1 Public Notice in accordance with 310 CMR 22.16 occurs, the PWS must contact and consult with DEP staff within 24 hours of the public water system first learning of the violation.**
2. **If a coliform bacteria violation has occurred, the public water system must file a Coliform Violation Evaluation Survey (Appendix H) with the local DEP regional office. This survey will not be used for compliance purposes but will provide DEP with valuable information on the cause and corrective actions for coliform bacteria violations.**

LEVEL IV: EMERGENCY RESPONSE PROCEDURES

Major Emergencies Caused by Natural Disasters

These incidents are generally caused by a widespread meteorological or geological event that disrupts the water system affecting more than 50% of the system and/or requiring more than one week for recovery of services. Such events may cause structural damage to a treatment facility or contaminate a source with untreated sewage, toxic chemical, or radioactive material. A Declaration of State of Water Supply Emergency and/or a Boil Water Order or Do Not Drink Order are likely to be required.

Examples: failure of an impoundment, destruction of equipment releasing hazardous materials, deposit of hazardous products into a surface water supply

If the disruption of the system causes equipment failure and/or contamination caused by bacteriological activity, follow the emergency response procedures for Level III. If the contamination is caused by chemical compound(s), use the following procedure:

Initial Response:

1. Begin documentation log (Emergency Response Checklist) at first report of the problem.

2. Investigate problem and evaluate the situation to determine the extent of impact on the water system. Collect water samples for analyses to determine if it is contaminated and the type of contamination.

Response Procedures for Level IV - Chemical Contamination:

3. If possible, remove the affected water supply source or close the distribution system until it can be fully evaluated for contamination.

4. Contact DEP Regional Office for further instructions.

5. Inform proper local and state authorities/agencies, activate response team immediately and respond in accordance with the Emergency Response Plan. The responsible authority or authorities will issue the necessary "Orders". See Appendix D - Procedures Involving Outside Agencies and Personnel.

6. Inform the public through the local/regional electronic media about the emergency, affected area, and alternative water supply. Keep the public informed about new developments through "special reports and public service news".

7. With DEP approval, activate alternative water supply such as bottled water, interconnections with other water systems, tanked water, etc.

8. Evaluate the situation to brief the authorities and inform the public. If necessary, take other precautionary measures to safeguard public health.

9. Collect new samples for analyses and put in place a monitoring system to ensure a safe water quality.

10. Maintain records of all activities throughout the incident. Retain records for future reference.

11. Monitor resolution of the emergency and take appropriate action if the level of the emergency changes.

12. Complete the checklist and attach the necessary forms/memoranda. Send to DEP Regional Office two (2) copies of the completed checklist and all attachments. It will not be necessary to send this specific emergency information to DEP if some other process will provide the necessary reporting (i.e. Emergency Declaration Procedure).

Notes:

1. **If a violation requiring a Tier 1 Public Notice in accordance with 310 CMR 22.16 occurs, the PWS must contact and consult with DEP staff within 24 hours of the public water system first learning of the violation.**
2. **If a coliform bacteria violation has occurred, the public water system must file a Coliform Violation Evaluation Survey (Appendix H) with the local DEP regional office. This survey will not be used for compliance purposes but will provide DEP with valuable information on the cause and corrective actions for coliform bacteria violations.**

LEVEL V: EMERGENCY RESPONSE PROCEDURES

Nuclear Disasters/Major Terrorist Acts

These incidents involve large and uncontrolled releases of radioactive material or compounds into the environment/water supply source or deliberate acts that impair a water system (i.e. terrorism). In the case of a nuclear disaster, surface water supplies within a 50-mile radius of a nuclear power plant experiencing such a release may be immediately contaminated. Groundwater supplies may remain safe for a period of time. A Declaration of Water Supply Emergency and/or a Do Not Drink Order are likely to be required.

Examples: Nuclear power plant release to the environment or deliberate release of highly toxic materials to a water supply.

Initial Response:

1. Begin documentation log (Emergency Response Checklist) at first report of the problem.

2. Investigate problem and evaluate the situation to determine the extent of impact on the water system. Collect water samples for analyses to determine if it is contaminated and the type of contamination.

Response Procedures for Level V:

3. If possible, remove the affected water supply source or close the distribution system until it can be fully evaluated for contamination.

4. Be prepared to follow the directives issued by the Massachusetts Emergency Management Agency on the Emergency Broadcast network; and provide the necessary assistance to this agency. At a minimum, the directives will advise the public:
   - Not to use surface or ground water until the source is analyzed and approved to be safe for human or animal consumption.
   - Limit the ingestion of water stored in closed containers or bottled water until after it has been tested and approved for consumption. **????**

5. DEP and/or the Department of Public Health will provide technical assistance and provide information on testing water sources to ensure that they are safe for consumption.

7. Maintain records of all activities throughout the incident. Retain records for future reference.

8. Monitor resolution of the emergency and take appropriate action if the level of the emergency changes.

Notes:

1. **All threats against a water system must be reported to the State Police and Federal Bureau of Investigation immediately.**
2. **Terrorist acts found to be minor in nature may be reduced to a lower level and follow the appropriate emergency response procedures.**
3. **If a violation requiring a Tier 1 Public Notice in accordance with 310 CMR 22.16 occurs, the PWS must contact and consult with DEP staff within 24 hours of the public water system first learning of the violation.**
4. **If a coliform bacteria violation has occurred, the public water system must file a Coliform Violation Evaluation Survey (Appendix H) with the local DEP regional office. This survey will not be used for compliance purposes but will provide DEP with valuable information on the cause and corrective actions for coliform bacteria violations.**

APPENDIX A
LOCAL AUTHORITES AND DEPARTMENTS - EMERGENCY TELEPHONE NUMBERS
(Attach additional sheets if needed)

City/Town: Rockport, MA PWS Name: Rockport, MA PWS ID #: 3252000

Local Authorities:

Fire Department	Russell Anderson	Fire Chief	978-546-3844 (h)
	Name	Title	Telephone
	978-546-7001	rcakaa@juno.com	
	Fax	Email rfdshief@gis.net	
Police Department	Thomas McCarthy	Police Chief	978-546-3444
	Name	Title	Telephone
	978-546-7355	rockportpd@adelphia.net	
	Fax	Email	
Health Department	Leslie Whelan	Health Inspector	978-546-3701
	Name	Title	Telephone
	978-546-3562	lwhelan@town.rockport.ma.us	
	Fax	Email	
	978-546-2881		
	Cell Phone	Pager	
			978-546-9802 (h)
Town Official(s)/ Elected Official(s)	Charles Clark	Chair, Selectman	978-546-6786 (o)
	Name	Title	Telephone
	978-546-2881	chclark@shore.net	
	Fax	Email	
	Cell Phone	Pager	
			978-546-6786 (o)
	Nicola Barletta	Selectman	978-546-6143 (h)
	Name	Title	Telephone
	Fax	Email	
	Cell Phone	Pager	
			978-546-6786 (o)
	Jonathan Weaver	Selectman	978-546-1179 (h)
	Name	Title	Telephone
	978-546-2881	weaverj@pbworld.com	
	Fax	Email	
	Cell Phone	Pager	

Water Supply Responsible Authorities: w - work telephone h - home telephone

Superintendent	John Tomasz,DPW Director	w 978-546-3525 h 978-479-8287
	Name	
	978-546-3562	jtomasz@town.rockport.am.us
	Fax	Email
	Cell Phone	Pager

***Include Area Code on All Telephone Numbers**

Assist. Superintendent _____ w _____ h _____
Name

_____ _____
Fax Email

_____ _____
Cell Phone Pager

Primary Operator Roy Lee w 978-546-6992 h 978-546-2138
Name
978-546-2931 srl@adelphia.net
Fax Email
978-479-8269 _____
Cell Phone Pager

Secondary Operator Bruce Newman w 978-546-6992 h 978-546-3055
Name
978-546-2431 _____
Fax Email

_____ _____
Cell Phone Pager

Local News Media:

Newspapers Gloucester Daily Times 978-283-7000
Name Telephone
978-282-4397 _____
Fax Email

_____ _____
Cell Phone Pager

_____ _____
Name Telephone

_____ _____
Fax Email

_____ _____
Cell Phone Pager

Radio Stations WESX – Betty Stavis 978-546-1230
Name Telephone
978-744-1883 _____
Fax Email

_____ _____
Name Telephone

_____ _____
Fax Email

Television Stations Adelphia Cablevision 888-683-1000
Name Telephone
978-281-8679 Fox WSXT www.fox25.com
Fax Email (CBS) WBZ www.wbz.com

_____ _____
Name Telephone

_____ _____
Fax Email

***Include Area Code on All Telephone Numbers**

Other (i.e. Short-wave Radio Operators	Joseph Perry (WB1CHF)		9789-546-6578
	Name		Telephone
		336s@go.com	
	Fax	Email	
	Name		Telephone
	Fax	Email	

Other Emergency Contacts:

Special Users (i.e. Schools, Hospitals, Nursing Homes, Prisons, Others)

Addison Gilbert Hospital	298 Washington St.,Gloucester	978-283-4000
Name	Address	Telephone
Rockport High School	24 Jerden's Lane	978-546-1234
Name	Address	Telephone
Den Mar Nursing Home	44 South Street	978-546-6311

Waterworks Contractors

John Tomasz, DPW Director	38 Storeybrooke Drive	978-462-2102
Name	Address Newburyport, MA	Telephone
Name	Address	Telephone

Hazardous/Toxic Waste Clean-up Contractors 508-465-1595

Enpro Services Inc.	Newburyport, MA	800-966-1102
Name	Address	Telephone
Clean Harbors Env. Serv.	Braintree.MA	781-849-1800
Name	Address	Telephone

Replacement Equipment (Rental/Purchase) and Repair Parts Suppliers

(Replacement)	Southworth Milton, Inc.	Milford, MA	508-634-3400
	Name	Address	Telephone
(Repair)	Sudbay Motors	Gloucester, MA	978-283-4730
	Name	Address	Telephone

***Include Area Code on All Telephone Numbers**

Please complete all items on this form, return two (2) copies to the DEP Boston Drinking Water Program Office with your Annual Statistical Report and keep a copy in an accessible location with the rest of your emergency response information. Please keep this information updated.

APPENDIX B
LIST OF STATE AND FEDERAL AGENCIES TELEPHONE NUMBERS

State Agencies:

State Police……..(800) 525-5555**

Department of Environmental Protection - Drinking Water Program Offices

Boston……(617) 292-5770*

Northeast Region (Wilmington).……...(978) 661-7600*

Southeast Region (Lakeville)……(508) 946-2700*

Central Region (Worcester)……..(508) 792-7650*

Western Region (Springfield)……...(413) 784-1100*

Department of Public Health……...(617) 624-6000*
Outside of Working Hours……...(617) 522-3700**

Nuclear Incident Advisory Team……(617) 727-9710**

Massachusetts Emergency Management Agency……...(508) 820-2000**

Federal Agencies:

EPA (Boston Office)……...(617) 918-1111*

National Response Center……...(800) 424-8802**

Federal Emergency Management Agency……..(617) 223-9540**

Occupational Safety & Health Administration……...(800) 321-6742*

Communicable Disease Center (Atlanta, Georgia)…….(800) 311-3435*

Federal Aviation Administration (Accident Reporting)……..(781) 238-7001**

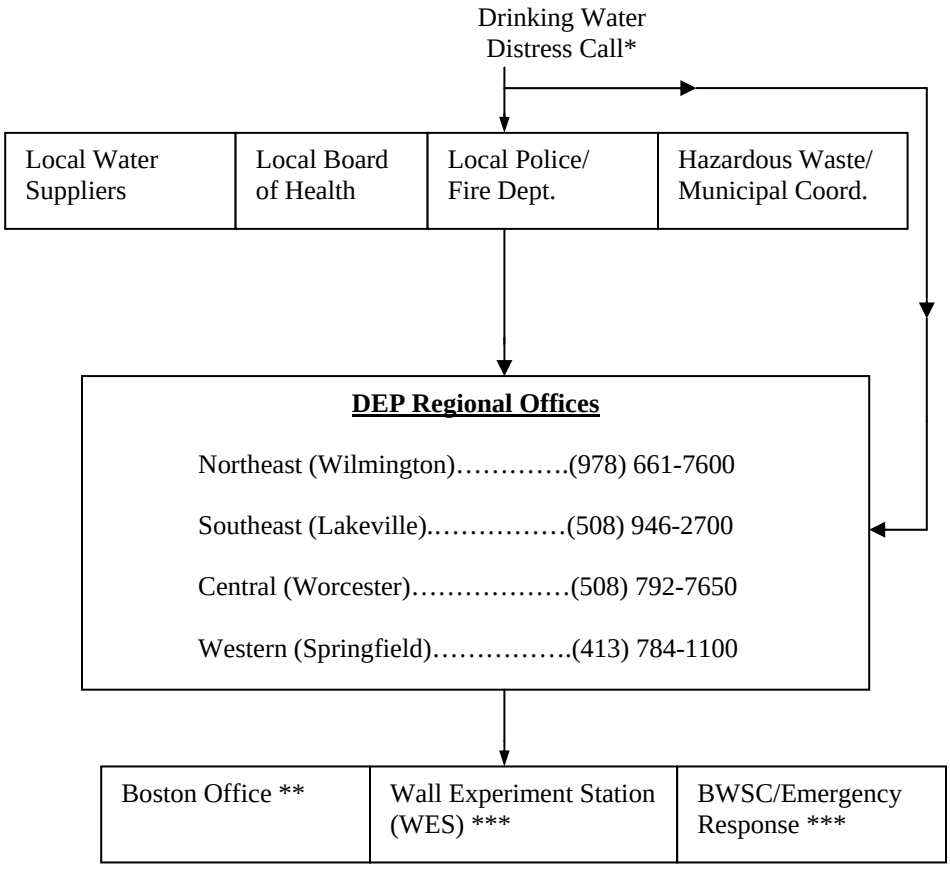
Federal Bureau of Investigation……..(617) 742-5533**

* Day Time
** 24 Hours

APPENDIX C
PROCEDURES FOR CONTACTING DEP

DEP may be contacted 24 hours/day, seven day per week by using the procedures in Section A of this Appendix during regular working hours or by using the procedures in Section B during all other hours.

A. During Working Hours - Monday to Friday (9:00 AM to 5:00 PM):



* All threats or suspected acts of terrorism against a water system must be reported to the Local Police or State Police immediately. Local and State Police will determine if the Federal Bureau of Investigation will be notified.

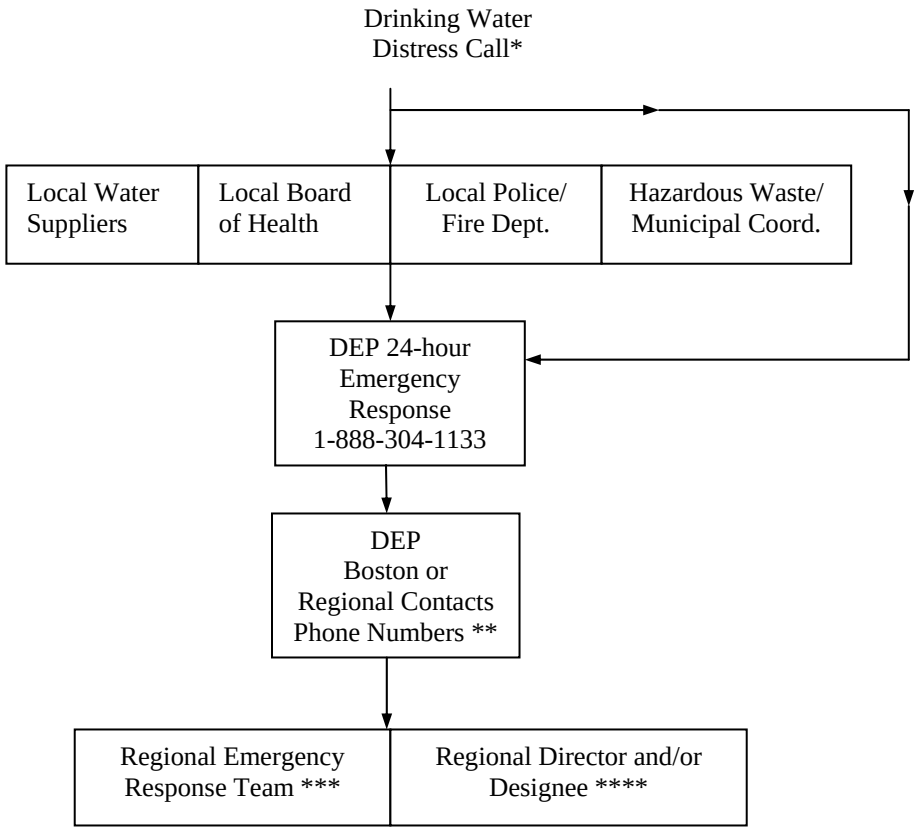
** Calls made directly to the Boston Office will be referred to the specific regional office.

*** WES will only be contacted by the Regional or Divisional Director or their designee, if deemed necessary, and will give advice on the necessary chemical analysis to be taken and will also decide which analyses can be done by WES.

**** The Bureau of Waste Site Cleanup (BWSC)/Emergency Response will be contacted whenever there is a spill, release of oil and/or hazardous material. The Drinking Water Program will work with the BWSC/Emergency Response until the end of situation. Each Bureau should exchange copies of all reports written as a result of the situation (i.e. spill reports and water supply emergency data reports).

APPENDIX C (continued)

B. <u>During Non-Working Hours - Monday to Friday (5:00 PM to 9:00 AM), Weekends and Holidays:</u>



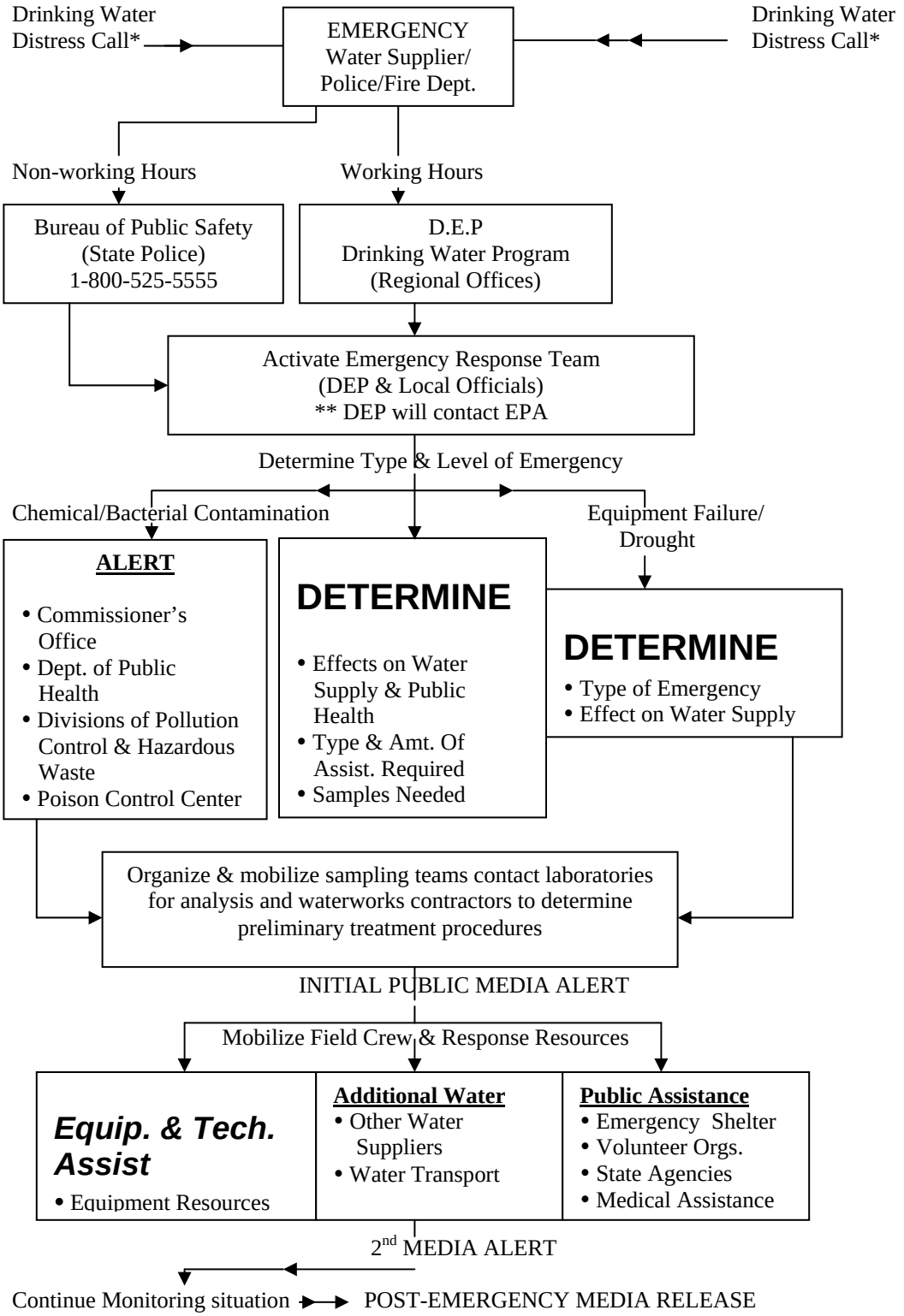
* All threats or suspected acts of terrorism against a water system must be reported to the Local Police and State Police immediately. Local and State Police will determine if the Federal Bureau of Investigation will be notified.

** DEP's Emergency Response team will contact the Drinking Water Program.

*** The Regional Incident Response person may be able to handle the emergency without calling the Regional Director or his/her designee. Incident Response personnel are required to notify, by telephone, the regional Drinking Water Section Chief at the start, or within 24 hours, of the event (emergency) being reported and forward a copy of the Incident Report to the Drinking Water Program at the DEP Boston Office.

**** The Regional Director or his/her designee will define the scope of the problem, determine who should handle the emergency response, and determine who should be contacted (i.e. local Board of Health, etc.). The Regional Director or his/her designee will also have available a list, with addresses and telephone numbers, of experienced volunteer water supply engineers. This list will also be available to the Office of Incident Response. This list should be prioritized in order of experience. Services will be reimbursed, for any time spent outside of their normal working hours, according to the current union contract.

APPENDIX D
PROCEDURES INVOLVING OUTSIDE AGENCIES & PERSONNEL



* All threats against a water system must be reported to the State Police immediately.

** EPA will be responsible for contacting the Federal Agencies if the emergency is related to tampering with the water system.

APPENDIX E
ROCKPORT EMERGENCY RESPONSE CHECKLIST

City/Town: Rockport PWS Name: _____ ID #: _____

Complete a checklist for every emergency and, within thirty (30) days of a Level III or IV emergency, file an Emergency Report, attaching the checklist used during the Emergency Response. Send one (1) copy, with all additional forms and documents used according the Handbook for Water Supply Emergencies, to DEP Regional Office, addressed to Drinking Water Program (DWP). (If you already have a reporting form available please use it in lieu of the form below).

REPORT ALL EMERGENCIES

Name of Person Completing Form: _____ Title: _____

Date: _____ Time of Report: _____

Location of Emergency: _____
Address / Line No. / Well No./Reservoir

Emergency Caller Information (Circle): Male/Female Adult/Child

_____ Home Telephone _____
Name Work Telephone _____

_____
Address

If the emergency is a threat against a water system, collect the following:
Voice: Normal Loud Whisper Calm Excited Nervous Other:_____
Connection: Clear Other (could it have been a cell phone): _____
Background Noise: Children Music Computer Television Radio Animals (type)_____
Machinery (type)_____ Other:_____

Describe the problem/ emergency: Time: _____
_____
_____
_____

Determine Emergency Level (circle): I* II* III IV V

*If Levels I or II, described the steps taken to handle the emergency.
_____
_____
_____
_____
_____

If Level I or II, stop and file the report at this point.
If Level III or greater, continue on next page.

APPENDIX E (continued for Level III or greater)

Which of the following events were involved in the emergency? (Check appropriate actions)

☐ Motor vehicle accident:

Vehicle type: _____ Make: _____
Color: _____ Reg._____ State: _____
Owner (Name/Address):_____
_____

☐ Accidental discharge:

☐ Illegal dumping/discharge:

☐ Chemical(s) involved:

Trade Name/ Common Name: _____
(Circle) Solid / Liquid / Vapor Other: _____
Placard / Label ID / DOT #: _____

☐ Disease outbreak, type of disease: _____

☐ Bacterial Problem, describe: _____

Nearest Public Drinking Water Source (surface/ground):
_____
Name/address (location)
Approximate distance from emergency location _____

☐ Other – DESCRIBE IN DETAIL:_____

_____

_____

_____

_____

Which of the following actions did you complete? (Check appropriate actions)

☐ Notify person(s) in charge of all emergencies:

Name: _____ Home Telephone_____
Work Telephone_____
Initial Emergency Response: _____
_____

☐ Close reservoir: _____ Wells Nos. _____
Name of Reservoir

☐ Shutdown pump(s): _____
No. or Name

☐ Shut off some of the distribution lines
Specify (location, valve):_____

☐ Cross Connection Survey
Results:_____

☐ Other (describe):_____

☐ Local Authorities/Departments Contacted:

___Water Supply Superintendent/Assistant
___Mayor/Officials
___Police Department
___Other: _____
___Certified Operator
___Fire Department
___Health Department

☐ Local/Regional News Media Contacted:

___Local Newspaper
___Local TV Station
___Other: _____
___Local Radio Station
___Local Short-wave
Radio Operator(s)

☐ State Authorities/Agencies Contacted:

___State Police / State Agencies (Emergency Line)
___DEP (Emergency Line): ___Boston ___NERO ___SERO ___CERO ___WERO
___DEP: ___Water Pollution Control ___Hazardous Waste
___Department of Public Health
___Massachusetts Emergency Management Agency (MEMA)
___Other: _____

☐ Federal Authorities/Agencies Contacted:

___EPA - Boston Office (Emergency Line)
___National Response Center
___Coast Guard
___Federal Emergency Management Agency (FEMA)
___Federal Highway Administration
___National Guard
___Communicable Disease Center - Atlanta, GA
___Other: _____

☐ Notify office staff about the problem/emergency to answer questions from the users;

☐ Brief the person(s) in charge of the emergency response and superiors about new developments;

☐ Prepare and attach a list of equipment and materials (specification/quantity) used in emergency response;

☐ Emergency report (checklist) completed; (Prepare and file the emergencies report for every single emergency situation.)

☐ Emergency report filed and one (1) copy submitted to DEP Regional Office - DWP.

☐ Other: _____
_____
_____

APPENDIX F
GUIDELINES FOR PREPARING A NEWS RELEASE

YOURTOWN WATER DEPARTMENT
123 Main Street
Yourtown, YX 99999

Date of Issuance: Month, Day, Year

CONTACT: Contact's Name
Work Telephone
Home Telephone

FOR IMMEDIATE RELEASE

YOUR CITY OR TOWN, STATE - When preparing a news release, the questions: WHO? WHAT? WHEN? WHERE? And HOW? (when appropriate) should be answered in the lead paragraph. The lead paragraph should be kept as brief as possible, with no more than one or two sentences at most.

- The body of a news release should start about one-third of the way down the page. The news release should be typed or printed on one side of 8 1/2" x 11" sheets of paper.
- Use wide margins at the top and bottom of the page, and double-space your release so the copy can be edited, as appropriate.
- The source of information should be prominently displayed at the top of the release. In addition, the release should list the name, address and telephone number of the contact person in the upper left corner of the first page.
- A release date should appear in the upper right-hand section of the first page. Most releases should be "FOR IMMEDIATE RELEASE". Stipulate a date for release only when the news warrants holding it for a specific date or time.
- The text should be tightly edited. Keep your sentences and paragraphs short; use proper punctuation and grammar.
- End each sheet at the end of a paragraph. Use "more" at the bottom of the sheet if the release continues onto another sheet.
- Put a slugline in the upper left-hand corner of the second sheet and any additional sheets. Indicate the appropriate page number in the slugline.

Indicate the end of the release by placing one of the following symbols at the bottom of the last page of the news release:

###

30

END

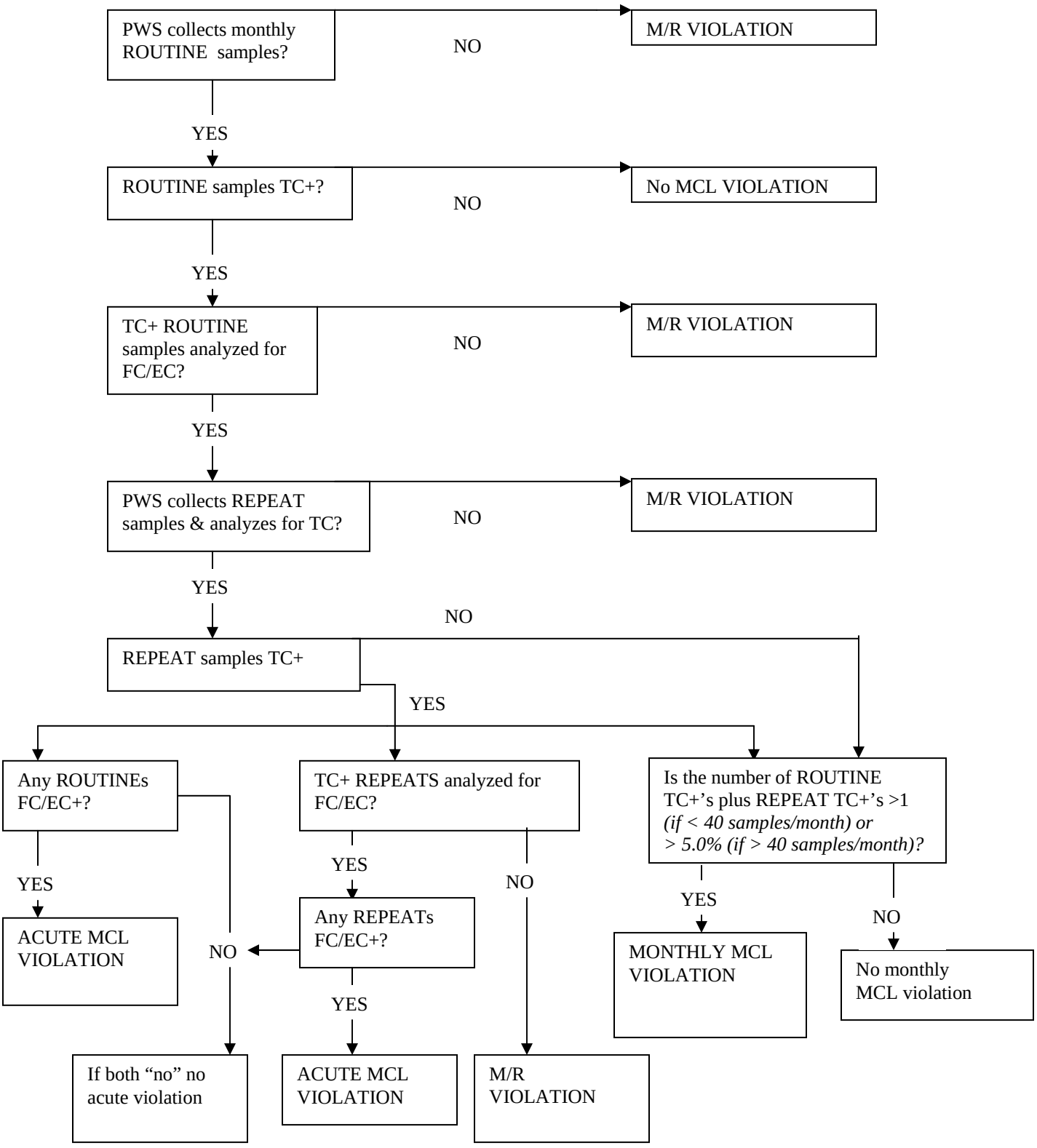
Proofread every word; double-check the copy with your source; let someone else proofread the finished copy for typos and grammar before distribution.

###

(Credit to Drinking Water Week Workbook published by New England Water Works Association)

APPENDIX G

VIOLATION DETERMINATION FOR THE TOTAL COLIFORM RULE



APPENDIX H
COLIFORM VIOLATION EVALUATION SURVEY

TOWN : **Rockport**
PWS NAME: **Rockport Filtration Plant**
PWSID #:
PHONE #: ( ) FAX #: ( )
E-MAIL ADDRESS:
DATE PWS became aware of violation:
DATE DEP was notified:

Use this form to evaluate the cause of a coliform bacteria violation and to provide DEP with information on the cause of each coliform bacteria exceedence. **This form must be completed by your certified operator and sent to the Drinking Water Program at your DEP Regional Office.** This form will not be used for compliance or enforcement.

Please call your DEP Regional Office within 48 hours of the coliform finding.

1. Month and year of coliform violation? _____ Acute MCL violation? 🗀 Yes 🗀 No Number of samples taken per month? _____

2. Number of positive samples? _____ Date of repeats? _____
Number of repeats positive? _____ Number of repeats collected? _____ Which locations were positive?_____

3. Did the repeat test detect:
fecal coliform? 🗀 Yes 🗀 No e.coli? 🗀 Yes 🗀 No total coliform? 🗀 Yes 🗀 No

4. Was total coliform speciated? 🗀 Yes 🗀 No If yes, what was found? _____
_____

5. Did you evaluate the following?
a.) Valve operations in the area of bacteria presence? 🗀 Yes 🗀 No
b.) Was a cross connection survey done? 🗀 Yes 🗀 No
If yes, what was found? _____
_____
c.) Any flushing in the area? 🗀 Yes 🗀 No

6. Have you determined the cause of the coliform violation? 🗀 Yes 🗀 No
If yes, please check all that apply:
🗀 Water entering the distribution system 🗀 Cross connections (see 5b.)
🗀 Raw water 🗀 Sample collection error
🗀 Storage tank 🗀 Other: _____
🗀 Water main break _____

7. What is your plan to prevent similar problems in the future? _____
_____

8. If chlorinating, what is the residual in the system? _____

Signature _____ **Date**_____

Rockport Procedures 1: Start-Up and Shutdown Procedures for Rockport Filtration Plan

1. Initialize digistrip if necessary
2. Record all readings necessary
3. Turn off alarm system to police station
4. Change day chart in Bristol if necessary
5. Remove day sheet from digistrip
6. Turn off quarry pump control and interlock
7. Start main pump and record time
8. Start booster pump downstairs
9. Check fluoride pump, record meter reading
10. Turn on sample tape
11. Set chessell to proper percent in manual position
12. Start two lowlift pumps (see chart)
13. Open post and pre-lime feeder valves
14. Turn on power to polymer feeder
15. Start chlorine systems and record cylinder weights
16. Turn on coagulation basin mixers
17. Open coagulation valve 35 turns
18. Turn filter rate control switches to automatic
19. Turn on sample tap in laboratory
20. Record electric meter reading
21. Check all chemical feeders for proper operation – Note: need for filling
22. Check for proper flow in coagulation basin
23. Check carbon feeder for operation when necessary
24. Check filter beds level of operation – Note: record hour on bed
25. Start taking all required samples and record all laboratory work
26. Record all laboratory work to state and day sheets
27. Check Quarry and Mill Brook stations and take samples when necessary
28. Fill all chemical feeders
29. Check low lift station and water level at pond. Fill potassium permanganate feeder. Check aeration compressor for proper operation
30. Clean office and laboratory as necessary

Rockport Procedures 2: Shutdown Procedure for Rockport Filter Plan

1. Shutdown main pump Note: Record time
2. Fill clearwell as necessary
3. Turn quarry pump to automatic position
4. Turn off coagation basin mixers
5. Shutdown paddle drive unit
6. Shutdown post and prelime feeder valves
7. Shutdown polymer feeder and alum
8. Shutdown chlorinators, record cylinder weight
9. Turn off both low lift pumps
10. Turn filter rate controls to close position
11. Check carbon feed when necessary
12. Turn off booster pump
13. Turn on alarm system to policy station
14. Turn on alarm system to police station
15. Log digistrip and record all figures as necessary
16. Note any problems for Chief Plant Operator

Rockport Procedures 3: Emergency Procedure When Filter Plan is Running and Power Goes Out

1. Generator will start automatically
2. Reset fire alarm
3. Reset chlorine alarm
4. Resent computers to filter beds
5. Reset chessell as necessary
6. If low lift pumps do not come on use #1 and #2 in hand position
7. Restart coagulation mixers
8. Restart booster pump
9. Reset polymer feeder alarm, if necessary
10. Check carbon feeder, if necessary
11. Record all pumpage readings that were lost
12. Start high lift pump #1 – Note: high lift pump #1 only one hooked to generator
13. Try to get as much information on power outage as possible
14. If power comes back on generator will support filter plan for additional 30 minutes before flipping to normal operations. Cool down period for generator is 7 minutes.

Rockport Procedures 4: Connect to Gloucester Water Supply for Back-up Water Source

Connect Rockport hydrant to Gloucester hydrant
GET THIS SORTED OUT _ IT IS QUITE UNCLEAR

VII. Water Supply Protection Overlay District

DEFINITIONS: *(Should these new definitions be in the definitions section because we may want them to apply to other sections of the Bylaw, or should they be in the WEPOD?)*

Add, in the correct alphabetical sequence, the following definitions:

"ZONE I (GROUND WATER): The area closest to the well, within a 400 foot radius of the well.

ZONE II (GROUND WATER): The primary recharge area for the aquifer. This area is defined by hydrogeologic studies and approved by the DEP.

ZONE A (SURFACE WATER): The area around a reservoir that includes the area between the surface of the water and the upper boundary of its bank, the area 400 feet from the upper boundary of the bank of a reservoir, and 200 feet from the top of the bank of its tributaries; provided, that the upper boundary of the banks of reservoirs and tributaries thereto are defined as the landward edges of any associated Bordering Vegetated Wetlands ("BVW") or, where BVW is not present, as the top of bank of reservoirs and tributaries thereto. Delineation of BVW and of "top of bank" shall be in accordance with current guidance published by the Mass. Department of Environmental Protection ("MADEP") or its successor agency.

ZONE B (SURFACE WATER): The area around a reservoir that includes the area .5 miles from the upper boundary of its bank; provided, that the upper boundary of the banks of reservoirs are defined as the landward edges of any associated Bordering Vegetated Wetlands ("BVW") or, where BVW is not present, as the upper boundary of the bank of reservoirs, exclusive of the area included in the defined Zone A. Delineation of BVW and of "upper boundary of bank" shall be in accordance with current guidance published by the Mass. Department of Environmental Protection ("MADEP") or its successor agency.

ZONE C (SURFACE WATER): The remaining area in the Water Supply Protection District not designated as Zone A or Zone B, Zone.

IMPERMEABLE SURFACE "Material or structure on, above, or below the ground that does not allow precipitation or surface water to penetrate directly into the soil beneath.";

WATER SUPPLY PROTECTION OVERLAY DISTRICT: The zoning district defined to overlay other zoning districts in the Town of Rockport. The Water Supply Protection Overlay District may include specifically designated recharge areas.

POTENTIAL DRINKING WATER SOURCES: Areas or aquifers which could provide significant drinking water in the future.

NORMAL HOUSEHOLD USE: any or all of the following exclusive of fuel or fluids in registered motor vehicles garaged on site:

i. 600 gallons or less of oil on site at any time to be used for heating of a structure or to supply an emergency generator, or

ii. A total of 25 gallons (or the dry weight equivalent) or less of other hazardous or toxic materials on site at any time, including oil not used for heating or to supply an emergency generator

TREATMENT WORKS: Any device, process and property, real or personal, used in the collection, pumping, transmission, storage, treatment, discharge, disposal, recycling, reclamation, or reuse of waterborne pollutants, but not including any works that receive a hazardous waste from off the site of the works for the purpose of treatment, storage, or disposal.

VERY SMALL QUANTITY GENERATOR: Any public or private entity, other than a residence, that produces less than 27 gallons by volume or an equivalent 100 kilograms by weight a month of hazardous waste or waste oil, but not including any acutely hazardous waste as defined in 310 CMR 30.136.

:

Water Supply Protection Overlay District (WSPOD)

1. Purpose of District. The purpose of this Water Supply Protection Overlay District is to:

   a. promote the health, safety, and general welfare of the community by ensuring high quality and safe drinking water for the residents, institutions, and businesses of the Town of Rockport through conserving the watershed areas of the town; and

   b. preserve, regulate, and protect existing and potential sources of drinking water supplies through protecting the water table and water recharge areas

2. **Scope of Authority**. The Water Supply Protection District (WSPOD) is an overlay district superimposed on the zoning districts, which operates in conjunction with other applicable local and state regulations. The WSPOD shall apply to all (a) new construction; (b) reconstruction or expansion of existing buildings; and (c) new or expanded uses in zones delineated for water supply protection. Applicable activities and uses in a portion of one of the underlying zoning districts which fall within the WSPOD must additionally comply with the requirements of this district. Uses prohibited in the underlying zoning districts shall not be permitted in the WSPOD.

3. **Definitions.** The following terms used in this section are defined in SECTION I.C. of the zoning bylaw: Groundwater, Impervious Surface, Normal Household Use, Potential Drinking Water Sources, Recharge Areas, Treatment Works, Very Small Quantity Generator, and Water Supply Protection District.

4. For the purposes of this section, a **Hazardous Material** is defined as follows: Any substance or mixture of physical, chemical, or infectious characteristics posing a significant actual or potential hazard to water supplies or other hazards to human health were such substance or mixture released in the Town of Rockport.

Hazardous materials include, without limitation; synthetic organic chemicals, petroleum products, heavy metals, radioactive or infectious wastes, acids and alkalis, and all substances defined as Toxic or Hazardous under Massachusetts General Laws (M.G.L.) Chapter(c.) 21C and 21E and 310 CMR 30.00.

5. **Establishment and Delineation of WSPOD**. The WSPOD established in this section consists of watersheds or recharge areas which are delineated on a map entitled "Water Supply Protection District, Town of Rockport," and is dated XXXX *(NOTE: Do we want to do a separate legal map or have what is required on the Official Zoning Map?).* This map is hereby made a part of the Official Zoning Map of the Town of Rockport and is on file in the Office of the Town Clerk. The boundaries of the WSPOD do not necessarily coincide with property lines. In such instances, the regulations of this section shall apply only to that portion of a lot which lies within the WSPD.

6. **Zones:** The WSPOD consists of four zones (A, B, C, I, II), defined in 310 CMR 22.02. These zones are drawn around surface and ground water supplies, both community water supplies, and non-community water supplies as defined in 310 CMR 22.02.

7. **Use Regulations**.

   a. Within the Water Supply Protection Overlay District all of the requirements of the underlying zoning districts continue to apply except that:

      i. Uses designated with a dash (—) in the Water Supply Protection Table of Uses shall not be permitted except as restricted; and

      ii. Uses designated with "SBA" may only be permitted by special permit from the Board of Appeals, even if the underlying district requirements are more permissive.

   b. Uses designated with "P" or “NA” shall be controlled by requirements of underlying zoning districts.

   c. For uses located in more than one zone, the most restrictive requirement shall apply.

   d. Except for uses related to the operation and maintenance of the Rockport public water supply as defined in 310 CMR 22.00, no activities or uses are permitted within Zone I, as defined in Section I.C.. of this bylaw.

   e. Uses allowed in the underlying zoning district but prohibited by the Water Supply Protection Table may be allowed by Board of Appeals special permit, if the Planning Board finds that the Applicant has demonstrated, on the basis of hydrogeologic evidence, that the proposed use or activity is located on property that should not have been included in Zone II, Zone A, Zone B, or Zone C of the Water Supply Protection District. Any application for said special permit shall be accompanied by documentation prepared by a professional who meets the following two requirements:

i. Is experienced in delineating hydrogeologic zones or wetlands in Massachusetts; and

ii. Has one or more of the following credentials, with the credentials selected that is appropriate to the issues relating to the specific project:

Title	Conferring Entity
Registered Professional Hydrologist	American Institute of Professional Geologic Scientists:American Institute of Hydrology
Certified Professional Geologic Scientist	American Institute of Professional Geologic Scientists
Professional Wetland Scientist	Society of Wetland Scientists
Certified Groundwater Professional	Association of Groundwater Scientists and Engineers

The applicant shall provide information in substantial conformance with the criteria set forth in 310 CMR 22.00 and in the DEP's Guidelines and Policies for Public Water Systems for the delineation of Zones, as administered by the Massachusetts Department of Environmental Protection, to show that the proposed use or activity is not within the Water Supply Protection Overlay District. The Planning Board may engage a professional as defined above to review the application containing said hydrologicr analysis and shall charge the applicant for the cost of the review.

	Water Supply Protection District Table of Uses	**Surface water Zone A**	**Ground water Zone II**	**Surface Water Zone C**
1)	The creation, replacement, expansion or repair of water bodies and dams, splash boards, and other water control, supply and conservation devices for non-Rockport public water supply purposes, where otherwise legally permitted	SPA	P	SPA
2)	Drilling to a depth greater than 15 feet below existing grade, not including drilling of monitoring wells by the Town of Rockport	SPA	SPA	P[1]
3)	Replacement or repair of an existing sewage treatment works subject to 314 CMR 3.00 or 5.00, that will not result in a design capacity greater than the design capacity of the existing treatment works	P	P	P
4)	Discharge from sewage treatment subject to 314 CMR 3.00 or 5.00, except as described in 3) above	__	SPA	SPA

	Water Supply Protection District Table of Uses	Surface water Zone A	Ground water Zone II	Surface Water Zone C
5)	Replacement or repair of an existing treatment or disposal works, as approved by DEP, subject to 314 CMR 5.00 for non-sanitary wastewater including industrial and commercial process wastewater, that will not result in a design capacity greater than the design capacity of the existing treatment works	P	P	P
6)	Publicly owned treatment works as approved by DEP, subject to 314 CMR 5.00 for non-sanitary wastewater including industrial and commercial process wastewater	---	SPA	SPA
7)	Treatment or disposal works, as approved by DEP, subject to 314 CMR 5.00 for non-sanitary wastewater including industrial and commercial process wastewater, except as described in 3), 5), and 6) above.	__	__	SPA
8)	Water remediation treatment works approved by DEP, designed and operated in accordance with 314 CMR 5.00, for the treatment of contaminated ground or surface waters	SPA	SPA	SPA
9)	Hitching, standing, feeding and grazing of livestock no closer than 100 feet from the edge of a surface-water source or tributary, if that 100 feet constitutes an established and maintained vegetative buffer strip[2]	**P**	NA	NA
10)	Application of animal manure applied to the soil as fertilizer, subject to Town of Rockport Board of Health regulation, in accordance with the specifications of the Natural Resource Conservation Service Agricultural Waste Management Field Handbook, Appendix 13[3]	P	P	P
11)	Storage of fertilizers (as defined in MGL Chapter 128, s.64), animal manure and/or stockpiling agricultural wastes, unless such storage if enclosed within a structure designed to prevent the generation and escape of contaminated runoff and/or leachate, in which instance the storage is allowed by written approval of the Department of Public Works	__	__	__
12)	Wading or bathing, fishing, boating, seaplane, or other contrivance, enter on ice for any purpose or cause an animal to go on any drinking water supply	---	NA	---

13) Enlargement or alteration of existing uses that do not conform to the Water Supply Protection District. A special permit shall not be issued unless: a. Construction, use, or possible abandonment of project improves or does not affect quality of the water supply; b. In making its determination, the SPGA shall be guided by input from the Board of Health, the Water Commissioners, and the Director of Department of Public Works for Rockport.	SPA	SPA	SPA
14) The rendering impervious of: *(We need to consider lot sizes in WPOD areas)* a. no more than fifteen percent (15%), or two thousand five hundred (2,500) square feet, of any lot, which ever is greater b. no more than twenty percent (20%) of any lot, if artificial recharge is provided,[4] or, if artificial recharge is infeasible, an alternate system of stormwater management c. more than twenty percent (20%) of any lot, if a system of stormwater management and/or artificial recharge is provided.[4]	P	P	P
15) Removal of soil, loam, sand, gravel, or any other mineral substance within four (4) feet of historical high groundwater table elevation as determined from monitoring wells, redoximorphic features, or historical water table fluctuation data compiled by the United States Geological Survey, not including: a. Earth removal if substances removed are permitted to be and are re-deposited within 45 days of removal on site to achieve a final grading greater than 4 feet above the historical high water marker[5]; or b. Excavations for building foundations, roads, utility works, or wetland restoration	__	__	SPB
16) New sand, quarry, and gravel operations	---	---	-- (SPB)

Water Supply Protection District Table of Uses	Surface water Zone A	Ground water Zone II	Surface Water Zone C
17) Any new floor drainage system, in industrial or commercial process areas or hazardous material and/or hazardous waste storage areas, which discharges to the ground without a DEP permit or authorization.	—	—	—
18) Landfills receiving only wastewater and/or septage residuals including those approved by the DEP pursuant to M.G.L.c. 21, §26 through §53; M.G.L.c. 111, §17; M.G.L c. 83, §6 and §7, and regulations promulgated thereunder; and other landfills and open dumps, as defined in 310 CMR 19.006	—	—	—
19) Solid waste combustion or handling facilities	---	—	---
20) Storage and/or disposal of sludge and septage	—	—	—
21) Cesspool, privy, dry well, filter or other place for reception, deposit or storage of human waste. Devices for collection of sink waste. Composting of human waste or other putrescible	—	—	--
21) Automobile graveyards and junkyards, as defined in M.G.L.c. 140B, §1, and other salvage or junkyards	—	—	—
22) On-site discharge or disposal of industrial waste other than non-sanitary wastewater	—	—	—
23) Facilities that generate, treat, store, or dispose of hazardous waste that are subject to M.G.L.c. 21C and 310 CMR 30.00, not including: a. Very small quantity generators of hazardous waste, as defined under 310 CMR 30.353; b. Household hazardous waste centers and events under 310 CMR 30.390[6]; c. Waste oil retention facilities required by M.G.L. c. 21, § 52A[6]; or d. Water remediation treatment works approved by DEP, designed and operated in accordance with 314 CMR 5.00, for the treatment of contaminated ground or surface waters	—	SPB	SPB
24) Installation or replacement of underground tanks for storage of hazardous materials, including heating fuel, not including replacement of previously legally existing commercial underground storage tanks for storage of hazardous materials[5]	—	—	—

Water Supply Protection District Table of Uses	Surface water Zone A	Ground water Zone II	Surface Water Zone C
25) Storage of liquid hazardous materials or other leachable materials, as defined in M.G.L.c. 21E, liquid petroleum products and/ other leachable materials[7], unless such storage is: a. Above-ground level on an impervious surface, and b. The storage is incidental to: i. Normal household use, outdoor maintenance, or the heating, ventilation and/or air conditioning (HVAC) systems of a structure; ii. Use of emergency generators, provided that no more than 600 gallons is stored on site at any time; or iii. A response action conducted or performed in accordance with MGL c. 21E and 310 CMR 40.000 and which is exempt from a groundwater discharge permit pursuant to 314 CMR 5.05(14); and c. Either i. in container(s) or above ground tank(s) within a building, or; ii. outdoors in covered container(s) or above ground tank(s) in an area that has a containment system designed and operated to hold either 10% of the total possible storage capacity of all containers, or 110% of the largest container's storage capacity, whichever is greater in which instance such storage is allowed by written approval of the Department of Public Works	—	SPB	SPB
26) Use of fertilizers, herbicides, and pesticides approved by Federal and State agencies for nonresidential and nonagricultural uses provided that all necessary precautions shall be taken to prevent hazardous concentrations in the water or the land resulting from the application	SP	SP	SP
27) Operation of dry cleaning facility	—	---	SPB
28) Operation of commercial car washing facility indoor or outdoor	—	SPB (--)	SPB
29) Establishment for repair and/or service of new and/or used automobiles, trucks, aircraft, boats, motorcycles, and household and camping trailers	—	—	SPB

Water Supply Protection District Table of Uses	Surface water Zone A	Ground water Zone II	Surface Water Zone C
30) Petroleum, fuel oil and heating oil bulk stations and terminals, not including liquefied petroleum gas	—	—	—
31) Wholesale distribution and/or warehousing of commercial packaged liquid petroleum products, including Class A, B, and C motor fluids~~,~~	—	P	P
32) Bulk storage of deicing chemicals and sanding materials, unless such storage, including loading areas, is within a covered structure designed to prevent the generation and escape of contaminated runoff and/or leachate, in which instance the storage is allowed by written approval of the Department of Public Works	—	—	—
33) Stockpiling and disposal of snow and ice containing deicing chemicals, brought in from outside the zone	—	—	—
34) Outdoor storage of fungicides, rodenticides, pesticides, herbicides	—	—	—
35) Storage of fertilizers (as defined in MGL Chapter 128, §64), animal manure and/or stockpiling agricultural wastes, not including such storage if enclosed within a structure designed to prevent the generation and escape of contaminated runoff and/or leachate, in which instance the storage is allowed by written approval of the Department of Public Works	—	—	—
36) Disposal of animal remains and operation of cemeteries (human and animal) and mausoleums	---	P	P

[1] Subject to obtaining permit from the Building Inspector

[2] Vegetated buffer strips means either “Filter Strips” or “Field Borders” as defined in the MADEP Nonpoint Source Management Manual, and shall be not less than 100 feet in width.

[3] NRCS Handbook available in Planning Board Office, Town Hall. *(Should we have this in Rockport?)*

[4] The system of storm water management and artificial recharge of precipitation shall be designed to prevent untreated discharges to wetland and surface water; preserve hydrologic conditions that closely resemble pre-development conditions; reduce or prevent flooding by managing peak discharges and volumes of runoff; minimize erosion and sedimentation; not result in significant degradation of groundwater; reduce suspended solids and other pollutants to improve water quality; and provide increased protection of sensitive natural resources.

These standards may be met using the following or similar best management practices:

(a) For single or two family residences, recharge shall be attained through site design that incorporates natural drainage patterns and vegetation to maintain pre-development stormwater patterns and water quality to the greatest extent possible. Stormwater runoff from rooftops, driveways and other impervious surfaces shall be routed through vegetated water quality swales, as sheet flow over lawn areas or to constructed stormwater wetlands, sand filters, infiltration systems, organic filters and/or similar systems.

(b) For multi-family residential and non-residential uses, a stormwater management plan shall be developed which provides for the artificial recharge of precipitation to groundwater through site design that incorporates natural drainage patterns and vegetation and uses constructed (stormwater) wetlands, wet (detention) ponds, water quality swales, sand filters, organic filters, infiltration systems, or similar site appropriate best management practices capable of removing nitrogen and other contaminants from stormwater, in compliance with the Stormwater Management Standards and technical guidance contained in the Massachusetts Department of Environmental Protection's 1997 Stormwater Management Handbook, Volumes 1 and 2. No runoff shall be discharged directly to rivers, streams, and other surface water bodies, wetlands or vernal pools.

Except when used for roof runoff from non-galvanized roofs, all such wetlands, ponds, swales or other infiltration facilities shall be preceded by oil, grease and sediment traps or other best management practices to facilitate control of hazardous materials spills and removal of contamination and to avoid sedimentation of treatment and leaching facilities. All such artificial recharge systems shall be maintained in full working order by the owner(s) under the provisions of an operations and maintenance plan approved by the permitting authority to ensure that systems function as designed. Infiltration systems greater than three (3) feet deep shall be located at least one hundred (100) feet from drinking water wells. Any infiltration basins or trenches shall be constructed with a three (3) foot minimum separation between the bottom of the structure and maximum groundwater elevation.

[5] Not allowed in Zone A.

[6] Not allowed in Zone A unless an existing use.

[7] These storage requirements shall not apply to the replacement of existing tanks or systems for the keeping, dispensing or storing of gasoline provided the replacement is performed in accordance with applicable state and local requirements.

8. Procedures for Issuance of Special Permit.

a. **Special Permit Granting Authority**. The Special Permit Granting Authority (SPGA) under this bylaw shall be the *Planning Board.(Do we want this in Rockport?)*

b. **Review by Other Boards and Officials**. Upon receipt of the special permit application, the *Planning Board* shall transmit one copy each to the Board of Health, Water Commissioners, Conservation Commission, and the Department of Public Works for their written recommendations. Failure to respond in writing to the Board within 35 calendar days of receipt shall indicate approval or no desire to comment by said agency. The applicant shall furnish the necessary number of copies of the application.

c. **Criteria**. The Planning Board may grant the required special permit only upon finding that the proposed use meets the criteria established in **XXX** of this bylaw, as well as the following criterion:

The proposed use shall in no way, during construction or thereafter, adversely affect the existing or potential quality or quantity of water that is available in the Water Supply Protection Overlay District; and further, the use shall be designed to avoid substantial disturbance of the soils, topography, drainage, vegetation, and other water-related natural characteristics of the site to be developed.

d. **Regulations**. The Planning Board may adopt regulations to govern design features of projects. Such regulations shall be consistent with subdivision regulations and Site Plan Review Bylaw adopted by the Planning Board of the Town of Rockport and the Town of Rockport

e. **Submittal Requirements**. The applicant shall file six copies of a site plan and attachments. The site plan shall be drawn at a proper scale as determined by the Planning Board and be stamped by a professional engineer. All additional submittals shall be prepared by qualified professionals. The site plan and its attachments shall at a minimum include the following information where pertinent:

i. A complete list of chemicals, pesticides, herbicides, fertilizers, fuels, and other potentially hazardous materials to be used or stored on the premises in quantities greater than those associated with normal household use;

ii. For those activities using or storing such hazardous materials, a Hazardous Materials Management Plan shall be prepared and filed with the Hazardous Materials Coordinator, Fire Chief, and Board of Health. The plan shall include provisions to protect against the discharge of hazardous materials or wastes to the environment due to spillage, accidental damage, corrosion, leakage, or vandalism, including spill containment and clean-up procedures.

9. **Monitoring**. Periodic monitoring of existing on-site groundwater monitoring wells and/or permission to install new wells on the applicant's property may be required by the Planning Board as a condition of the special permit, subject to the conditions of this bylaw. Such monitoring may include sampling of wastewater disposed to on-site septic systems or cesspools, or to drywells, and sampling from groundwater monitoring wells to be located and constructed as specified in the special permit. Reports shall be submitted to the Planning Board and the Board of Health. The cost of complying with the requirements of this paragraph shall be borne by the applicant.

10. **Violations and Enforcement**. Written notice of any violation of this bylaw shall be given to the responsible person as soon as possible upon observation, detection, knowledge or proof that a violation has occurred. Notice to the assessed owner of the property shall be deemed notice to the responsible person. Such notice shall specify the requirements or restriction violated and the nature of the violation, and may also identify the actions to remove or remedy the violations, preventive measures required for avoiding future violations, and a

schedule of compliance. A copy of such notice shall be submitted to the Planning Board, Board of Health, the Conservation Commission, and the Department of Public Works. The cost of containment, cleanup or other action of compliance shall be borne by the assessed owner of the property.

For situations that require remedial action to prevent impact to the water resources within the Water Supply Protection Overlay District, the Building Inspector, the Board of Health, or any of their agents may order the owner and/or operator of the premises to remedy the violations. If said owner and/or operator does not comply with said order, the Building Inspector, the Board of Health, or any of their agents, if authorized to enter upon such premises under the terms of the special permit or otherwise, may act to remedy the violation. The cost of remediation shall be the sole responsibility of the owner and/or operator of the premises.

11. **Severability**. A determination that any portion or provision of this Water Resource Protection Overlay District Bylaw is invalid shall not invalidate any other portion or provision thereof, nor shall it invalidate any special permit issued previously thereunder.

12. **Effective Date**: The provisions of this subsection VII.. shall go into effect on XXXXXXX."; and

.

Rockport Board of Health

[date of issuance]

Section I. PURPOSE OF REGULATION

Whereas:

- floor drains in industrial and commercial facilities are often tied to a system leading to a leaching structure (e.g. dry well, cesspool, leach field) or a septic system; and
- poor management practices and accidental and/or intentional discharges may lead petroleum and other toxic or hazardous materials into these drainage systems in facilities managing these products; and
- improper maintenance or inappropriate use of these systems may allow the passage of contaminants or pollutants entering the drain to discharge from the leaching structure or septic system to the ground; and
- discharges of hazardous wastes and other pollutants to floor drains leading to leaching structures and septic systems have repeatedly threatened surface and ground water quality throughout Massachusetts; and
- surface and ground water resources in the Town of Rockport contribute to the town/city's drinking water supplies;
- The Town of Rockport adopts the following regulation, under its authority as specified in Section II, as a preventative measure for the purposes of preserving and protecting Town of Rockport's drinking water resources from discharges of pollutants to the ground via floor drains, and minimizing the threat of economic losses to the Town due to such discharges.

Section II. SCOPE OF AUTHORITY

The Town of Rockport Board of Health adopts the following regulation pursuant to authorization granted by M.G.L. c.111 s.31 and s.122. The regulation shall apply, as specified herein, to all applicable facilities, **existing and new**, within the Town of Rockport.

Section III. DEFINITIONS

For the purposes of this regulation, the following words and phrases shall have the following meanings:

Commercial and Industrial Facility: A public or private establishment where the principal use is the supply, sale, and/or manufacture of services, products, or information, including but not limited to: manufacturing, processing, or other industrial operations; service or retail establishments; printing or publishing establishments; research and development facilities; small or large quantity generators of hazardous waste; laboratories; hospitals.

Department: The Massachusetts Department of Environmental Protection.

Discharge: The accidental or intentional disposal, deposit, injection, dumping, spilling, leaking, incineration, or placing of toxic or hazardous material or waste upon or into any land or water so that such hazardous waste or any constituent thereof may enter the land or waters of the Commonwealth. Discharge includes, without limitation, leakage of such materials from failed or discarded containers or storage systems and disposal of such materials into any on-site leaching structure or sewage disposal system.

Floor Drain: An intended drainage point on a floor constructed to be otherwise impervious which serves as the point of entry into any subsurface drainage, treatment, disposal, containment, or other plumbing system.

Leaching Structure: Any subsurface structure through which a fluid that is introduced will pass and enter the environment, including, but not limited to, dry wells, leaching catch basins, cesspools, leach fields, and oil/water separators that are not water-tight.

Oil/Water Separator: A device designed and installed so as to separate and retain petroleum based oil or grease, flammable wastes as well as sand and particles from normal wastes while permitting normal sewage or liquid wastes to discharge into the drainage system by gravity. Other common names for such systems include MDC traps, gasoline and sand traps, grit and oil separators, grease traps, and interceptors.

Toxic or Hazardous Material: Any substance or mixture of physical, chemical, or infectious characteristics posing a significant, actual, or potential hazard to water supplies or other hazards to human health if such substance or mixture were discharged to land or water of the Town of Rockport. Toxic or hazardous materials include, without limitation, synthetic organic chemicals, petroleum products, heavy metals, radioactive or infectious wastes, acids and alkalis, and all substances defined as Toxic or Hazardous under Massachusetts General Laws (MGL) Chapter 21C and 21E or Massachusetts Hazardous Waste regulations (310 CMR 30.000), and also include such products as solvents, thinners, and pesticides in quantities greater than normal household use.

Use of Toxic or Hazardous Material: The handling, generation, treatment, storage, or management of toxic or hazardous materials.

Section IV. PROHIBITIONS

With the exception of discharges that have received (or have applied and will receive) a Department issued permit prior to the effective date of this regulation, no floor drain(s) shall be allowed to discharge, with or without pretreatment (such as an oil/water separator), to the ground, a leaching structure, or septic system in any industrial or commercial facility if such floor drain is located in either:

A. an industrial or commercial process area,

B. a petroleum, toxic, or hazardous materials and/or waste storage area, or

C. a leased facility without either A or B of this section, but in which the potential for a change of use of the property to a use which does have either A or B is, in the opinion of the Board of Health or its agent, sufficient to warrant the elimination of the ground discharge at the present.

Section V. REQUIREMENTS FOR EXISTING FACILITIES

A. The owner of a facility in operation prior to the effective date of this regulation with a prohibited (as defined under Section IV) floor drain system shall:

1.disconnect and plug all applicable inlets to and outlets from (where possible) applicable leaching structures, oil/water separators, and/or septic systems;

2.remove all existing sludge in oil/water separators, septic systems, and where accessible, leaching structures. Any sludge determined to be a hazardous waste shall be disposed of in accordance with state hazardous waste regulations (310 CMR 30.000). Remedial activity involving any excavation and/or soil or groundwater sampling must be performed in accordance with appropriate Department policies;

3. Alter the floor drain system so that the floor drain shall be either:

a. connected to a holding tank that meets all applicable requirements of Department policies and regulations, with hauling records submitted to the Rockport Board of Health at the time of hauling;

b. connected to a municipal sanitary sewer line, if available, with all applicable Department and local permits; or

c. permanently sealed. Any facility sealing a drain shall be required to submit for approval to the Board of Health a hazardous waste management plan detailing the means of collecting, storing, and disposing any hazardous waste generated by the facility, including any spill or other discharge of hazardous materials or wastes.

B. Any oil/water separator remaining in use shall be monitored weekly, cleaned not less than every 90 days, and restored to proper conditions after cleaning so as to ensure proper functioning. Records of the hauling of the removed contents of the separator shall be submitted to the Board of Health at the time of hauling.

C. Compliance with all provisions of this regulation must be accomplished in a manner consistent with Massachusetts Plumbing, Building, and Fire code requirements.

D. Upon complying with one of the options listed under Section V.A.3., the owner/operator of the facility shall notify the Department of the closure of said system by filing the Department's UIC Notification Form {which may be obtained by calling 617/292-5770} with the Department, and sending a copy to the Rockport Board of Health.

Section VI. EFFECTIVE DATES FOR ALL FACILITIES

The effective date of this regulation is the date posted on the front page of the regulation, which shall be identical to the date of adoption of the regulation.

A. Existing Facilities:

1. Owners/Operators of a facility affected by this regulation shall comply with all of its provisions within 120 days of the effective date;

2. All applicable discharges to the leaching structures and septic systems shall be discontinued immediately through temporary isolation or sealing of the floor drain.

B. New Facilities:

1. As of the effective date of the regulation, all new construction and/or applicable change of use within the Town of Rockport shall comply with the provisions of this regulation.

2. Certification of conformance with the provisions of this regulation by the Board of Health shall be required prior to issuance of construction and occupancy permits.

3. The use of any new oil/water separator shall comply with the same requirements as for existing systems, as specified above in Section V.B.

Section VII. PENALTIES

Failure to comply with provisions of this regulation will result in the levy of fines of not less than ${200.00}, but no more than $1000.00. Each day's failure to comply with the provisions of this regulation shall constitute a separate violation.

Section VIII. SEVERABILITY

Each provision of this regulation shall be construed as separate to the end that, if any provision, or sentence, clause or phrase thereof, shall be held invalid for any reason, the remainder of that section and all other sections shall continue in full force and effect.